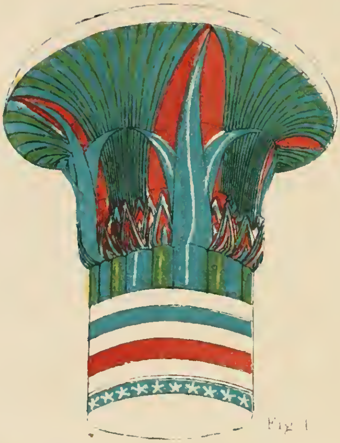
Plate XVII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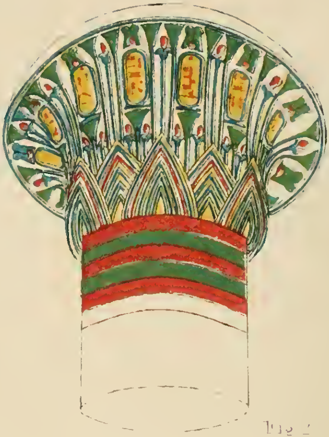
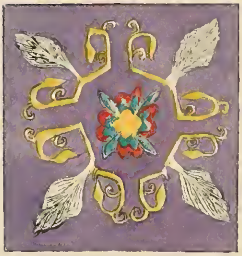


Fig 2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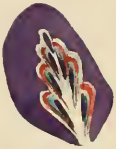

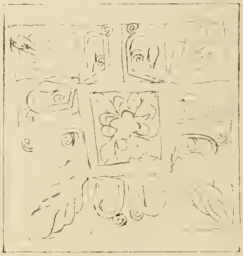
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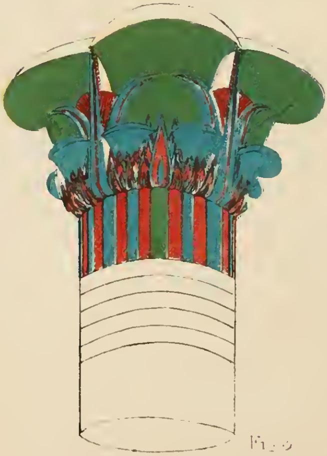
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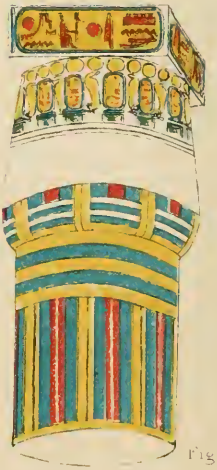
Fig 4

CAPITALS of COLUMNS

and a Piece of coloured Glass (Figs 5 6 7)

Humphreys sc.

Day & Haghe Lithrs to the Queen

MANNERS AND CUSTOMS

OF

THE ANCIENT EGYPTIANS,

INCLUDING

THEIR PRIVATE LIFE,
GOVERNMENT, LAWS, ARTS, MANUFACTURES,
RELIGION, AND EARLY HISTORY;

DERIVED FROM A COMPARISON OF

THE PAINTINGS, SCULPTURES, AND MONUMENTS STILL EXISTING
WITH THE ACCOUNTS OF ANCIENT AUTHORS.

Illustrated by Drawings of those Subjects.

By J. G. WILKINSON, F.R.S. M.R.S.L. &c.

AUTHOR OF "A GENERAL VIEW OF EGYPT, AND
TOPOGRAPHY OF THEBES," &c.

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395. No. 419. *Exvotos*. Models of a hand and ears dedicated to a deity.
398. Topographical Plan of the Pyramids of Geezeh.

ERRATA IN VOL. III.

Page 62. note 1. for "grown there, which is evidently," read "grown there, which (however erroneous) is evidently."
68. note § for "Fa as" read "Faras."
104. line 5. from the bottom, for "same process," read "same means."
237. note 5. for "tom. i. l. i. c. 1." read "tom. i. l. ii. c. 4."
238. one line from bottom, after "their use" put inverted commas.
264. line 15. for "Pluto," read "Plato."

IN THE WOOD-CUTS.

263. Vignette. The stones forming the arch are made too thin.

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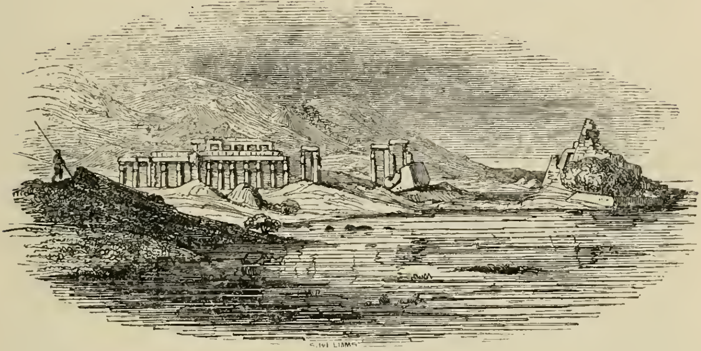
MANNERS AND CUSTOMS

OF THE

ANCIENT EGYPTIANS.

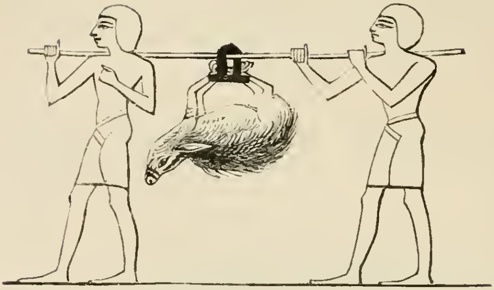


VIGNETTE G. The palace-temple of Remeses the Great, generally called the Memnonium, at Thebes, during the inundation.

CHAPTER VIII.

The Chase. — Animals. — Dogs. — Fowlers — Fishermen. — Hippopotamus. — Crocodile. — The Tentyrites.

All classes of the Egyptians delighted in the sports of the field, and the peasants deemed it a duty as well as an amusement, to hunt and destroy the hyæna, and those animals which were enemies of the fields or flocks, and they shot them with the bow, caught them in traps, or by whatever means their dexterity and ingenuity could suggest. For though the hyæna is a carnivorous animal, it is not



No. 318. Hyæna caught in a trap. *Thebes.*

less hostile to the crops than to the flocks, when pressed with hunger*, and the ravages they are known to commit in the fields among the Indian corn and other produce, make the peasants of modern Egypt as anxious as their predecessors to destroy them, whenever they have an opportunity, or the courage to attack them.

CHASE.

Plato† reckons the huntsmen as one of the castes of the Egyptians; and though, as I have already observed, persons who followed this occupation may have constituted a particular body, or a minor subdivision of one of the castes, we are not to suppose, that the sports of the field were confined to those who gained their livelihood by the chase; or that the wealthy classes of Egyptians were averse to an amusement so generally welcomed in all countries. Indeed, the sculptures of

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* I have already noticed this in Egypt and Thebes, p. 243, note.

† Plato in Timæo, near the beginning.

Thebes, Beni Hassan, and other places, assure us, that they took particular delight in chasing the wild animals, kept in their preserves for this purpose, and even in the more laborious task of following them in the extensive tracts of the wide desert, which stretch to the east and west of the valley of the Nile. On these occasions they were attended by several huntsmen, whom they kept in their service, to attend upon the hounds, to direct the hunt, to assist in catching the larger animals with a noose, to carry darts and hunting poles*, to arrange the nets†, and, in short, to manage all matters connected with the chase.

When the chasseur was a person of consequence, numerous attendants accompanied him, not merely in the capacity of beaters, to rouse and turn the game, or to carry it when killed, but for various purposes connected with his immediate wants or comforts while in the field; some brought with them a fresh supply of arrows, a spare bow, or other requisites for remedying accidents; and some carried a stock of provisions for his use. These were borne upon the usual yoke, across the shoulders, and consisted of a skin of water, and jars placed in wicker baskets, probably containing bread, meats, or other provisions. The skins used for carrying water were precisely the same as those of the present day, being of a goat, or a gazelle, stripped from the body by a longitudinal opening at the throat; the legs serving as handles, to which ropes for slinging them were attached; and a soft pendent tube of leather sewed to the throat, in the place of the head, formed the mouth of the water-skin, which was secured by a thong fastened round it.

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* The Roman venabula were of the thickness of a spear, armed with a sharp iron point, of moderate length, and used as a defensive weapon against the attack of a wild beast, being held in a slanting direction to receive it. J. Pollux, v. 4.

† Virg. Æn. iv. 131.:

> " Retia rara, plagæ, lato venabula ferro,
> Massylique ruunt equites, et odora canum vis."

And Hor. 1 Ep. vi. 58.: —

> " Plagas, venabula, servos."

This person was called by the Greeks, *δικτυαγωγος*. J. Pollux, v. 4.

Sometimes a space of ground, of considerable extent, was enclosed with nets, into which the animals were driven by beaters; and as this is frequently shown by the sculptures to have been in a hilly country, it is evident that the scenes of those amusements were in the desert, where they probably extended nets across the narrow vallies, or torrent beds, which lie between the rocky hills, difficult of ascent to animals closely pressed by dogs. This is indeed the only way in which a person, mounted on horseback* or in a chariot, could follow, or get within reach of them with the bow; and that some animals, particularly antelopes, when closely pressed, fear to take a steep ascent, is a fact well known to the Arabs; and I have myself, when following them with dromedaries in the same valleys, observed that gazelles preferred doubling, and swiftly passing between their pursuers, to the risk of slowly ascending the eminence to which they had been driven.

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* As in Virgil, Æn. iv. 151.: —

" Postquam altos ventum in montes, atque invia lustra;
Ecce feræ, saxi dejectæ vertice, capræ
Decurrere jugis: alia de parte patentes
Transmittunt cursu campos, atque agmina cervi
Pulverulenta fuga glomerant, montesque relinquunt.
At puer Ascanius *mediis in vallibus* acri
Gaudet equo: jamque hos cursu, jam præterit illos.'

The spots thus enclosed were usually in the vicinity of the water brooks*, to which they were in the habit of repairing in the morning and evening: and having awaited the time when they went to drink, and ascertained it by their recent tracks on the accustomed path†, the hunters disposed the nets, occupied proper positions for observing them unseen‡, and gradually closed in upon them. Such are the scenes partially portrayed in the Egyptian paintings, where long nets are represented surrounding the space, wherein the chasseur and his attendants pursue the game, either on foot or mounted in a chariot: and the presence of hyænas, jackals, and various wild beasts unconnected with the sport, is intended to show that they have been accidentally enclosed within the line of nets, which, from embracing an extensive tract, necessarily included within its range the resort of these, as well as of the antelopes and other animals, of which they were in quest.

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* "As the hart panteth after the water brooks." Ps. xlii. i. The Hebrew name is איל Aïl, evidently the same as the Egyptian Ⲉⲓⲟⲩⲗ and the Arabic ايل, which I believe to be the Oryx.

† My long sojourn with the Arabs in the desert, and my frequent visits to the springs for the same purpose, have explained to me the methods adopted by the ancient Egyptian chasseurs.

‡ The person whose business it was to watch the nets, was called by the Greeks *λινοπτης, ο τα εμπιπτουντα επισκουμενος*. J. Pollux, v. 4.

The same custom of surrounding a spot, which they intended to beat, seems to have been adopted by the Romans; and Virgil* represents Æneas and Dido repairing to a wood at break of day, after the attendants had surrounded it with a temporary fence, to enclose the game. This is further confirmed by the description, given by Julius Pollux, of the various contrivances employed in hunting; and he makes an evident distinction between the nets for enclosing a large space, and those for stopping gaps or openings, and other purposes.

The long net, called δικτυς, was furnished with several ropes, and was supported on forked poles, varying in length, to correspond with the inequalities of the ground over which it extended, and this was so contrived as to enclose any space, by crossing hills, valleys, or streams, and encircling woods, or whatever might present itself; a description fully applicable to those exhibited in the Egyptian paintings†; smaller nets, called ενοδια, for stopping gaps, are also described by the same author; and a circular snare ποδαγρα, set round with wooden and iron nails, and attached by a rope to a log of wood, which was used for catching deer, so nearly resembles one still made by the Arabs, and supposed to be an old Egyptian invention, that we may conclude it was common to several ancient people.

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* "Venatum Æneas, unaque miserrima Dido,
In nemus ire parant, ubi primos crastinus ortus
Extulerit Titan, radiisque retexerit orbem.
His ego nigrantem commista grandine nimbum,
Dum trepidant alæ, *saltusque indagine cingunt*,
Desuper infundam." Virg. Æn. iv. 117.

† *Vide* J. Poll. Onom. v. 4.

In many instances, the dresses of the attendants and huntsmen were, as Julius Pollux recommends, " not white, nor of a brilliant hue, lest they should be seen at a distance by the animals," but of a suppressed colour, and reaching only a short way down the thigh*; being shorter even than those he mentions, which extended to the knee; and the horses of the chariots were divested of the feathers and showy ornaments used on other occasions.

Besides the portions of the open desert and the vallies, above alluded to, which were enclosed by the Egyptians, during their hunting excursions, the parks and preserves on their own domains in the valley of the Nile, though of comparatively limited dimensions, offered ample space and opportunity for indulging in the amusement of the chase; and there, as in the *theriotrophia* of the Romans, a quantity of game was kept, among which may be enumerated the wild goat, oryx, and gazelle. They had also fishponds and spacious *vivaria*, set apart for keeping geese and other wild fowl, which they fattened for the table.

It was the duty of the huntsmen or the gamekeepers they employed, to superintend the preserves; and at proper periods of the year, when the young animals could be obtained, they sought them, and added to the stock, which continued also to increase,

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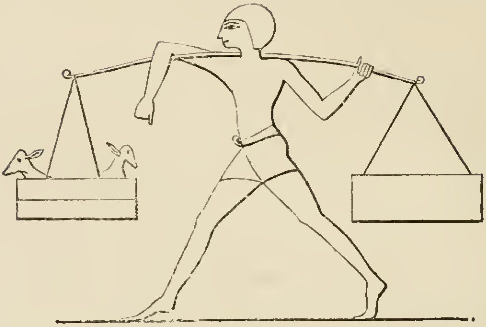
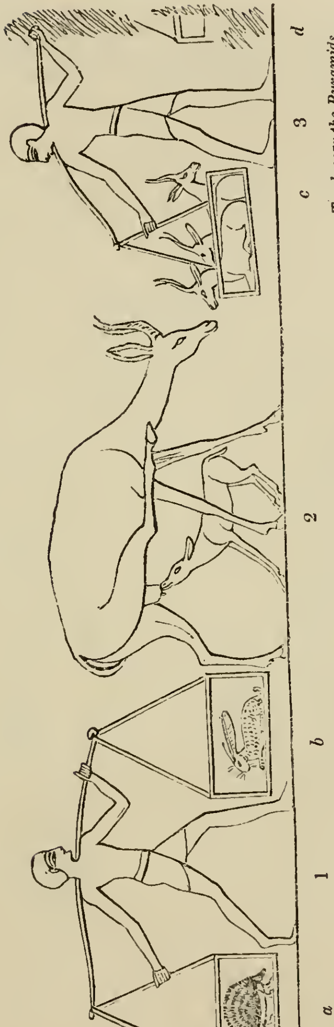
* *Vide* woodcut, No. 319. It was customary with the Egyptians, on ordinary occasions, to wear a kelt reaching to the knee.



No. 319. Bringing young animals to stock the preserves. *Tomb near the Pyramids.*

independent of those occasional additions, through the care taken in encouraging their propagation, by a judicious regard to their habits. And this is confirmed by the numerous flocks of gazelles and other wild animals, represented in the tombs, among the possessions of the deceased, of which the scribes are seen writing an account, at the command of the steward, who waits to present it, with an annual census of his property, to the owner of the estate.

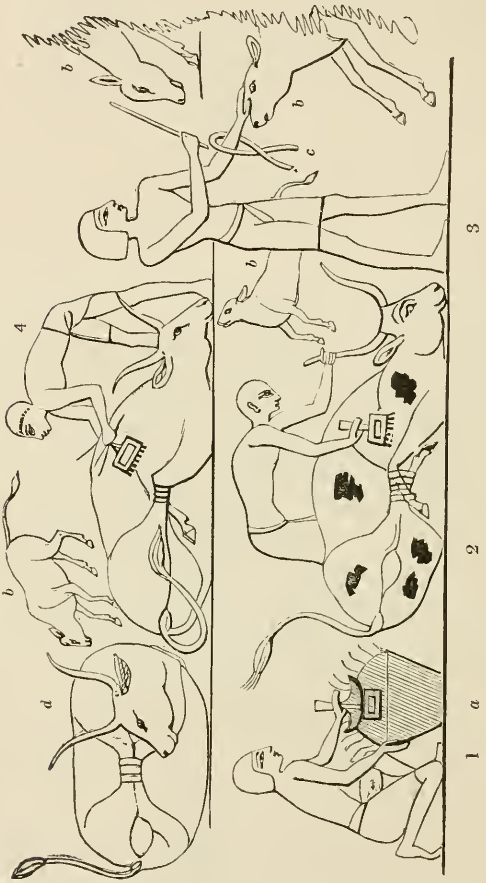
Being fed within pastures enclosed with fences, they were not marked in any particular way like the cattle, which, being let loose, in open meadows, and frequently allowed to mix with the herds of the neighbours, required some distinguishing sign by which they might be recognised; and were, therefore, branded on the shoulder with a hot iron, probably engraved with the owner's name. This is distinctly shown in the paintings of Thebes, where the cattle are represented lying on the ground with their feet tied, while one person heats an iron on



No. 320. Gazelles and other animals belonging to the preserves. *Tomb near the Pyramids.*

the fire, and another applies it to the shoulder of the prostrate animal.

In primitive ages, the chase was not an amusement, but a necessary occupation among those people, who did not follow agricultural pursuits, or lead a pastoral life, and who depended for their subsistence upon the sports of the field: and in some instances the shepherd was obliged to hunt



No. 321. Marking cattle with a hot iron. *Thebes.*

Fig. 1. Heating the iron on the fire, *a*.
2. and 4. Employed in marking the cattle.
3. Holds a tethering cord on his left arm, and keeps away the calves.

and destroy the wild beasts, for the security of his flocks and herds: and sometimes even for his own safety.[*] In after times, when population increased, and each community began to adopt the habits of civilised life, the injuries apprehended from them decreased; and the fear of man having compelled them to remove their haunts to a greater distance, their pursuit was no longer required; and those who hunted followed the occupation as an amusement, to supply the table, or in the employ of other persons: as among the Egyptians, Babylonians, Persians, and Medes.

In the East, indeed, it was always looked upon as a manly exercise, requiring courage and dexterity, and tending to invigorate the body, and to instil into the mind a taste for active pursuits; it was held in such repute, that the founders of empires were represented in the character of renowned hunters; and the Babylonians were so fond of the chase, that the walls of their rooms presented a repetition of subjects connected with it[†]; and they even ornamented their dresses and the furniture of their houses with the animals they hunted.[‡] The Medes and Persians were equally noted for their love of field sports; and, like the Egyptians, they had spacious preserves[§] where the game was enclosed; the grounds of the royal palaces containing antelopes and other animals, pheasants, peacocks, and abundance of birds, as well as lions, tigers, and wild boars.*

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[*] Whence in Exodus xxiii. 29.: "I will not drive them out from before thee in one year, lest the land become desolate, and the beast of the field multiply against thee."

[†] Ammian. Marcell. lib. xxvi. c. 6. Diod. 2.

[‡] Athen. lib. xii. 9.

[§] Xenoph. Cyr. lib. i. "*εν παραδεισοις*." Dio. Chrysost. in Orat. 3.

The Egyptians frequently coursed with dogs in the open plains, the chasseur following in his chariot, and the huntsmen on foot. Sometimes he only drove to cover in his car, and having alighted, shared in the toil of searching for the game, his attendants keeping the dogs in slips, ready to start them as soon as it appeared. The more usual custom, when the dogs threw off in a level plain of great extent, was for him to remain in his chariot, and, urging his horses to their full speed, endeavour to turn or intercept them as they doubled, discharging a well directed arrow whenever they came within its range.

The dogs were taken to the ground by persons expressly employed for that purpose, and for all the duties connected with the kennel, the κυναγωγοι † of the Greeks, and were either started one by one, or in pairs, in the narrow vallies or open plains: and when coursing on foot, the chasseur and his attendant huntsmen, acquainted with the direction and sinuosities of the torrent beds, shortened the road, as they followed across the intervening hills, and sought a favourable opportunity for using the bow: or marked with a watchful eye the progress of the course in the level space before them.‡ For not only was the chasseur provided with a bow, but many of those also who accompanied him; and the number of head brought home was naturally looked upon as the criterion of *his* good day's sport.

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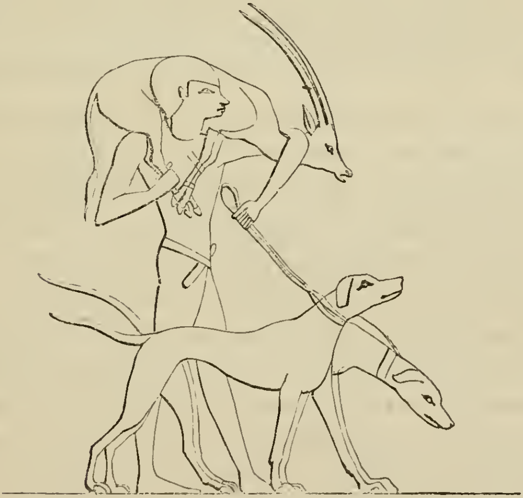
* Curtius, lib. 7 and 8. Xenoph. Cyrop. lib. i.

† J. Pollux, iv. 5.

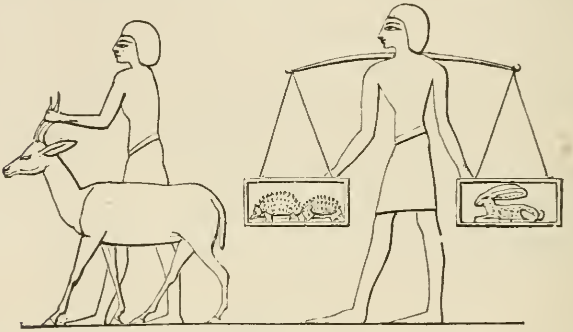
‡ As the Arabs of the present day, in the same districts.

Having with eager haste pursued on foot, and arrived at the spot where the dogs had caught their prey, the huntsman, if alone, took up the game, tied its legs together, and hanging it over his shoulders, once more led by his hand the coupled dogs, precisely in the same manner as the Arabs are wont to do at the present day; this, however, was generally the office of persons who followed expressly for the purpose, carrying cages and baskets on the usual wooden yoke, and who



No. 322. A huntsman carrying home the game, with his coupled dogs. *Thebes.*

took charge of the game as soon as it was caught; the number of these substitutes for our game cart depending of course on the proposed range of the chase, and the abundance they expected to find. Sometimes an ibex*, oryx, or wild ox, being closely pressed by the hounds, and driven to an eminence of difficult ascent, faced round and kept them at bay, with its formidable horns†, and the spear of the huntsman, as he came up, was required to decide the success of the chase.



No. 323. Bringing home the game: a gazelle, porcupines, and hare. *Beni Hassan.*

It frequently happened, when the chasseur had many attendants, and the district to be hunted was extensive, that they divided into parties, each taking one or more dogs, and starting them on whatever animal broke cover; sometimes they went without hounds, merely having a small dog for searching the bushes, or laid in wait for the larger and more formidable animals, and attacked them with the lance.

The noose was also employed to catch the wild ox, the antelope, and other animals; and as they are always represented on foot, when throwing it, we may suppose they lay in ambush for this purpose, and that it was principally adopted when they wished to secure them alive: since we find they frequently chased the same animals with dogs, and with the bow. The noose was very similar to the *lasso* of South America, but it does not appear that the Egyptians had the custom of riding on horseback when they used it; and from the introduction of a bush immediately behind the man who has

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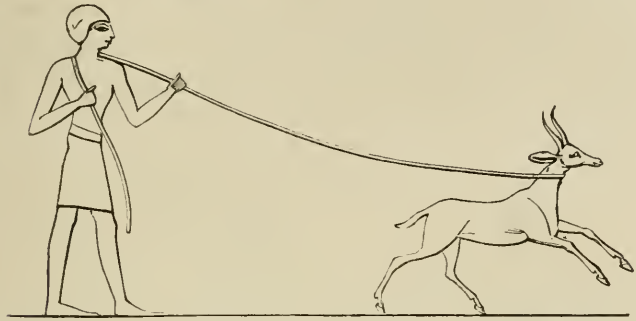
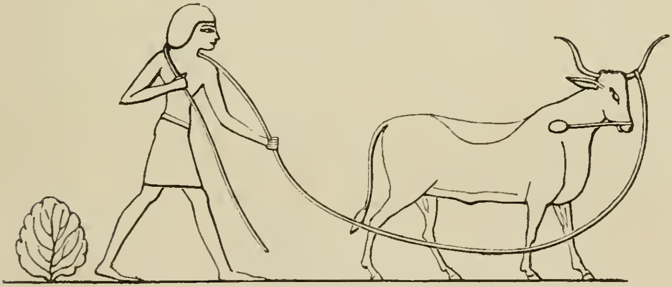
* The wild goat of the desert, the *beddan*, or *taytal*, of the Arabs, which are still common in the desert between the Nile and Red Sea.

† I have occasionally witnessed instances of this in the desert.



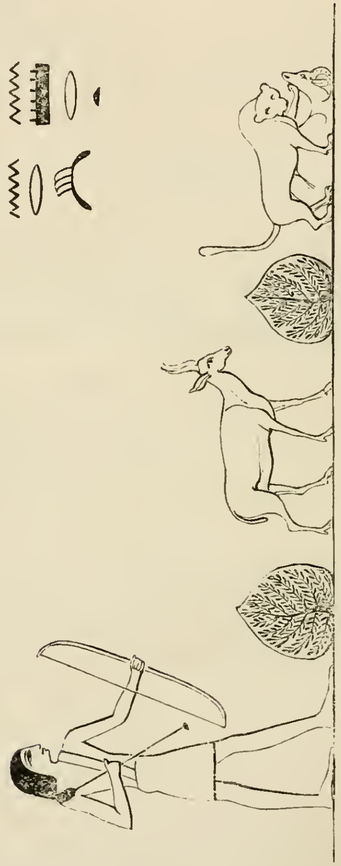
No. 324. Catching a gazelle with the noose. *Beni Hassan.*



No. 325. Catching a wild ox with the noose or *lasso*. *Beni Hassan.*

thrown it, we may suppose the artist intended to convey the notion of his previous concealment.

Besides the bow, the hounds, and the noose, they hunted with lions, which were trained expressly for the chase, like the *cheeta* or hunting leopard of



No. 326. Hunting with a lion. *Beni Hassan.*

Fig. 5. The lion which has seized an ibex.

India: but there is no appearance of the leopard* or the panther having been employed for this purpose; and the lion was always the animal they preferred. It was frequently brought up in a tame state†, and many Egyptian monarchs are said to have been accompanied in battle by a favourite lion,—as we learn from the sculptures of Thebes and other places, and from the authority of Diodorus.‡

The bow used for the chase was very similar to that employed in war; the arrows were frequently the same, with metal heads, but some were tipped with stone, which are represented in the hunting scenes of Beni Hassan, and in many of those at Thebes. The mode of drawing the bow was also the same, though, as I have already observed, the chasseurs sometimes pulled the string only to the breast, instead of the more perfect and more usual method of raising it, and bringing the arrow to the ear; and occasionally, one or more spare arrows were held in the hand§, to give greater facility in discharging them with rapidity on the swift antelopes and wild oxen.

ANIMALS.

The animals they chiefly hunted, were the gazelle, wild goat or *ibex*, the oryx, wild ox, stag*, *kebsh* or wild sheep, hare, and porcupine†; of all of which the meat was highly esteemed among

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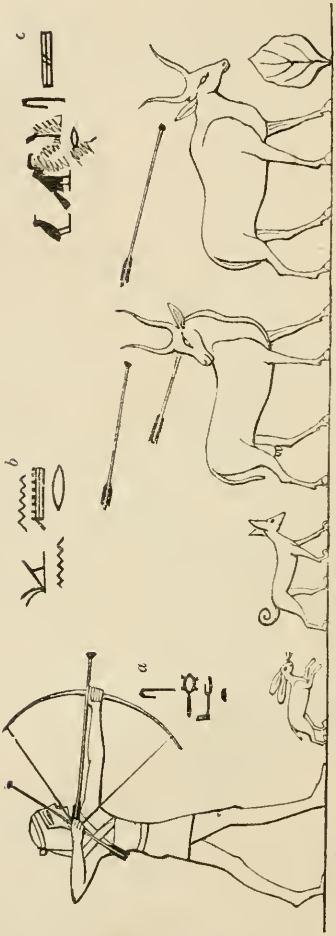
* Bagajet I. (Byazeéd) had 12,000 officers and servants of the chase. Besides hounds of various breeds, he had leopards, whose collars were set with jewels. Gibbon, xi. 64.

† I have seen two or three tame lions in Cairo. Animals are more easily tamed in those climates than in Europe.

‡ Diod. i. 48. And the sculptures of Dayr, Medeenet Haboo Kalabshi, &c.

§ *Vide* wood-cut, No. 327.; and No. 30., in Vol. I.



No. 327. A chasseur shooting at the wild oxen, accompanied by his dog, fig. 3. *Beni Hassan.*

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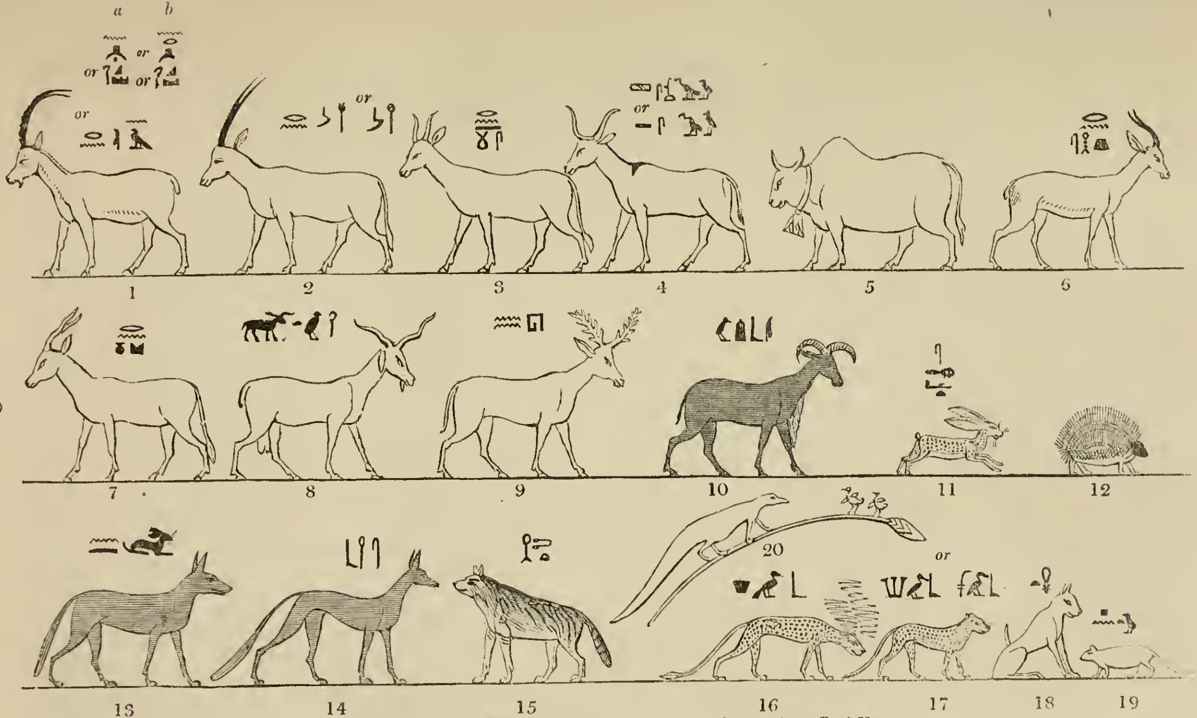
* Probably the same as the Cervus barbarus.

† I have not found this animal in Egypt. It is eaten in Italy, and sold in the markets of Rome and other places.



No. 328. Animals from the Sculptures. 5. 15. 20. from *Thebes*; the rest from *Beni Hassan.*

1. The ibex. 2. The oryx. 3, 4. Wild oxen. 5. Humped or Indian ox. 6. Gazelle. 7. Probably the antilope addax. 8. Goat. 9. Stag. 10. The kebsh. 11. Hare. 12. Porcupine. 13. Wolf. 14. Fox. 15. Hyæna. 16, 17. Species of Leopard. 18. Cat. 19. Rat. 20. Ichneumon. 10. Is coloured red in the paintings: the kebsh is of a sandy colour.

the delicacies of the table. Others, as the fox, jackal, wolf, hyæna, and leopard, were chased as an amusement, for the sake of their skins, or as enemies of the farm-yard; and the ostrich held out a great temptation to the hunter from the value of its plumes. These were in great request among the Egyptians for ornamental purposes; a religious veneration for them, as the symbol of truth, enhanced their value; and the members of the court on grand occasions failed not to deck themselves with the feathers of the ostrich. The labour endured during the chase of this swift-footed bird was amply repaid; even its eggs were required for some ornamental or religious use, and these, with the plumes, formed part of the tribute imposed by the Egyptians on the conquered countries where it abounded. The purposes to which the eggs were applied are unknown; but we may infer, from a religious prejudice in their favour among the Christians of Egypt, that some superstition was connected with them, and that they were suspended in the temples of the ancient Egyptians, as they still are in the churches of the Copts.*

The subjects of the chase in the sculptures are frequently represented with great spirit. The character of the animals is maintained with wonderful truth, and, though time and the hand of man have done much to injure them, sufficient remains to evince the skill of the Egyptian draughtsmen. Distance and locality are not so well defined, and the archer, like all Egyptian figures, offends against every rule of drawing and perspective ; but the action of the dogs and of the flying antelopes is spirited, and shows how successfully the effect was given by simple outline.

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* They consider them the emblems of watchfulness. Sometimes they use them with a different view: the rope of their lamps is passed through the egg, in order to prevent the rats coming down and drinking the oil, as we were assured by the monks of Dayr Antonios.

It is singular that the wild boar is never represented among the animals of Egypt, since it is a native of the country;—and is even eaten at the present day, in spite of the religious prejudices of the Moslems*, by many of the inhabitants of the districts where it lives :—nor can I suggest any reason for this omission, except from its not frequenting those parts where the scenes of the chase are laid, being confined to the low marshy spots about the north of the Delta, and the banks of the Lake Mœris. In the Thebaïd it was unknown ; the sculptures or paintings of Diospolis relate principally to the vicinity of Upper Egypt, and the monuments of the Delta and the lower country are too few to enable us to say if it was omitted there. Nor is the wild ass met with in the paintings, either of Upper or Lower Egypt, though it is common in the deserts of the Thebaïd.

Many other animals are introduced in the sculptures, besides those already noticed, some of which are purely the offspring of disordered imagination : and the winged quadrupeds, sphinxes, or lions, with the head of a hawk, or of a snake,

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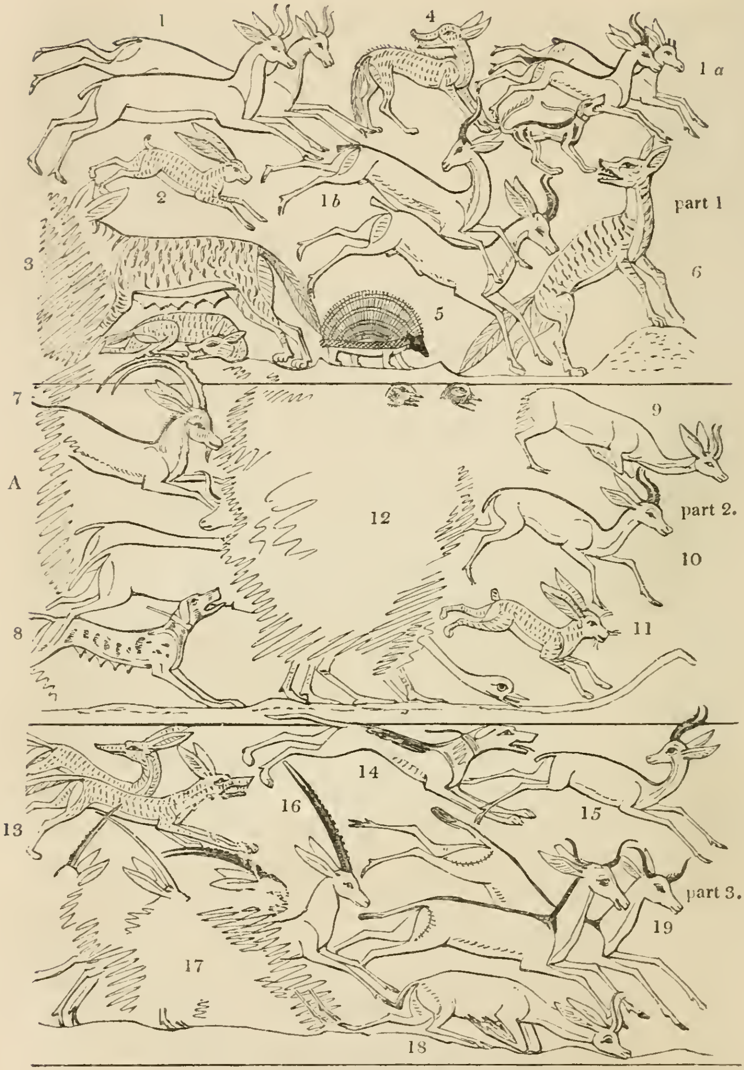
* That is, followers of Islám. Need I add, they never call themselves Mahometans, which is an European misnomer?

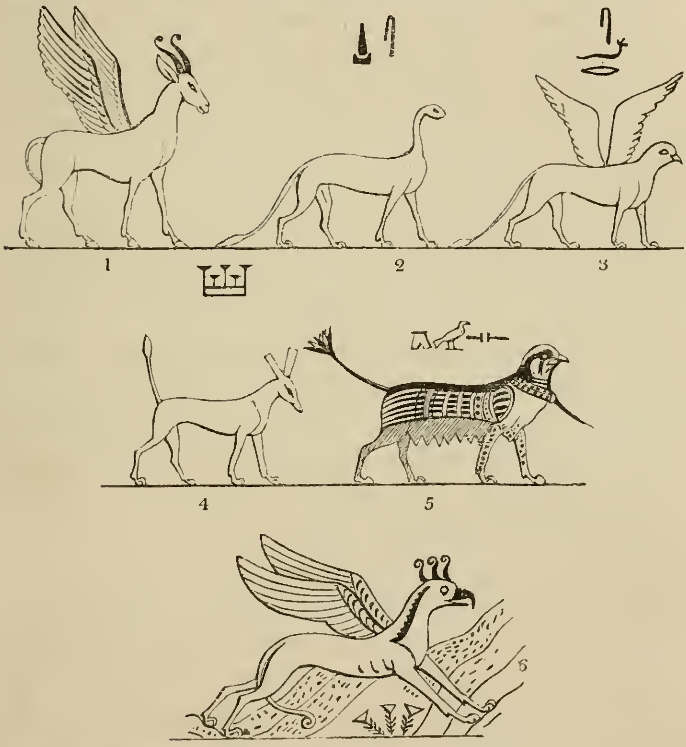


No. 329. A chase in the desert of the Thebaïd. *Thebes.*

To the left of A was the chasseur in his chariot shooting with the bow, now defaced.
Figs. 1, 9, 15, 18. Gazelles. 2, 11. Hares. 3. Female hyæna, with its young. 4, 13. Foxes. 5. Porcupine. 6. Hyæna arrived at the top of a hill and looking towards the chasseur. 7. The ibex. 8, 14. Hounds. 12. Ostriches (defaced). 16. The oryx. 19. Wild oxen.

and some others equally fanciful and unnatural, can only be compared to the creations of heraldry*, or serve as companions to the monsters of Pliny.†

The Egyptian sphinx was usually an emblematic figure, representative of the king, and may be considered, when with the head of a man and the body of a lion, as the union of intellect and physical force: it is therefore scarcely necessary to



No. 330. Monsters, in the paintings of Beni Hassan and Thebes.

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* An Austrian nobleman asked an English ambassador at Vienna, whose arms presented a griffin and other monsters, "in what forest they were met with?" "In the same," said the ambassador, "where you find eagles with two heads."

† Plin. viii. 21.

observe that they are never female, as those of the Greeks. Besides the ordinary sphinx, compounded of a lion and a man, and denominated androsphinx, were the criosphinx, with the head of a ram, and the hieracosphinx, with the hawk's head and lion's body,—all which are representatives of the king: but the asp-headed and the hawk-headed sphinx with wings, do not appear to have been adopted as the same symbol.

Those of the above mentioned animals which are still found in Egypt, either in the Valley of the Nile, or in the desert, are the gazelle *, ibex, *kebsh*, hare, fox, jackal, wolf, and hyæna.

The *oryx*† is a native of Ethiopia, as is the spotted hyæna‡ or *marafeén;* which last is once represented in the Egyptian sculptures. The oryx has long annulated horns, tapering to a sharp point, and nearly straight, with a slight curve or inclination backwards. It frequently occurs in the sculptures, being among the animals tamed by the Egyptians, and kept in great numbers in the preserves of their villas.

The *beïsa*§ is very like the oryx, except in the black marks upon its face, and a few other points; and the *addax*‖, another antelope, inhabiting Upper Ethiopia, differs principally from the oryx in its horns, which have a waving or spiral form: but these do not appear in the sculptures, unless the Egyptian artists, by an imperfect representation of them, and an inattention to their distinguishing peculiarities, have confounded them * with the oryx or the wild ox.

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* Wood-cut, No. 328. *fig.* 6. and No. 329. *figs.* 1. 9, 10. 15. 18.

† The antilope leucoryx. *V.* wood-cut, No. 328. *fig.* 2. & No. 329. *fig.* 16.

‡ The canis crocutus, which appears to be the *chaus* of Pliny, or, as some editions have it, *chama:* "effigie lupi, pardorum maculis." Lib. viii. 19.

§ Antilope beïsa.

‖ Antilope addax.

This last, which is also of the genus *antilope* †, the *defassa* of modern zoologists, though not a native of Egypt, is found in the African desert, and I believe in Eastern Ethiopia; it is of a reddish sandy and grey colour, with a black tuft terminating its tail, and stands about four feet high at the shoulder. Though made too much to resemble a common ox in some of the paintings, it is sufficiently evident that the Egyptians had in view the *defassa*, in their representations of this animal: and the Theban sculptors ‡, who had a better opportunity of becoming acquainted with it, have succeeded in giving its character far more satisfactorily than the painters § of Beni Hassan.

The stag with branching horns ||, figured at Beni Hassan, is also unknown in the Valley of the Nile; but I have been assured that it is still seen in the vicinity of the Natron Lakes, though not a native of the desert between the river and the Red Sea.

The *ibex* ¶, which is common in the Eastern desert, as far north as the range of the Qalalla and Gebel Aboo-Dúrrag, or latitude 29° 30′, is very similar to the bouquetin of the Alps, and is called in Arabic *Beddan* or *Táytal.* The former appellation is exclusively applied to the male, which is readily distinguished by a beard and large knotted horns, curving backwards over its body, the female

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* *Fig.* 7 of wood-cut, No. 328. appears to be the addax.

† Antilope defassa.

‡ *Vide* wood-cut, No. 329. *fig.* 19.

§ *Vide* wood-cut, No. 327. *figs.* 4. & 5.

|| Wood-cut, No. 328. *fig.* 9.

¶ Wood-cut, No. 328. *fig.* 1.

having short erect horns, scarcely larger than those of the gazelle, and being of a much smaller and lighter structure.

The *kebsh*, or wild sheep, is found in the Eastern desert, principally in the ranges of primitive mountains, which, commencing about latitude 28° 40′, at the back of the limestone hills of the Valley of the Nile, extend thence into Ethiopia and Abyssinia. The female kebsh is between two and three feet high at the shoulder, and its total length from the tail to the end of the nose is a little more than four feet: but the male is larger, and is provided with stronger horns, which are about five inches in diameter at the roots, and are curved down towards the neck. The whole body is covered with hair, like many of the Ethiopian sheep, and the throat and thighs of the fore legs are furnished with a long pendent mane; a peculiarity not omitted in the sculptures, and which suffices to prove the identity of the kebsh*, wherever its figure is represented.

The porcupine is not a native of Egypt; nor is the leopard met with on this side of Upper Ethiopia. Bears are altogether unknown, and if they occur twice in the paintings of the Theban tombs, the manner in which they are introduced sufficiently proves them not to have been among the animals of Egypt, since they are brought by foreigners, together with the productions of their country, which were deemed rare and curious to the Egyptians. Herodotus is therefore in error respecting the bear[*] as well as the otter[†]; but the Greek name of this last is so ambiguous, that it may apply to any "animal inhabiting the water," which is the signification of the word ενυδρις.

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* Wood-cut, No. 328. *fig.* 10.

With regard to the Egyptian wolf, which he says[‡] is small, and "scarcely larger than a fox," his statement is fully borne out by fact, and Pliny's remark[§], that "those of Egypt and Africa are small and inactive," is equally just. But it is still more remarkable that in Egypt their habits differ, in one of the principal characteristics of the species, from those of other countries, being so little gregarious; for, though so often in pursuit of them, I never met with more than two together, and generally found them prowling singly over the plain.

M. Sonnini's conclusions, respecting the existence of the wolf in Egypt, are hasty and erroneous; and he has perverted the meaning of Herodotus, when he says that the sacred animal of Lycopolis "was not the wolf, for there are none in Egypt, but the jackal, which seems clearly shown by Herodotus, when he says the wolves in that country are scarcely larger than foxes." The tombs in the mountain above Lycopolis, the modern E'Sioot[‖], contain the mummies of wolves, many of which I have examined, and ascertained to be of the sacred animals of the place;

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[*] Herod. ii. 67. "Bears being rare."

[†] Herod. ii. 72. "*Γινονται δε και ενυδριες εν τῳ ποταμῳ, τας ιρας ηγηνται ειναι.*" May he mean the "Woiran of the river," the large lacerta Nilotica?

[‡] Herod. ii. 67.

[§] Plin. 8. 22. "Inertes hos (lupos) parvosque Africa et Egyptus gignunt." Aristot. Hist. An. l. 8. c. xxviii.

[‖] I have shown that Aboolfeda, and others, were wrong in writing this name Osioot, in my Egypt and Thebes, p. 389.

the ancient sculptures represent them as natives of the country in the earliest times; and the coins of the Lycopolite nome bear a wolf on their reverse, with the word lyco (λυκο), signifying "a wolf." It is, therefore, evident, that M. Sonnini is in error, as to their not having been natives of Egypt in the time of Herodotus; and since we find them on both sides of the Nile, those now met with there are shown to be indigenous in the country, and not derived from any which may have accidentally strayed from the borders of Syria.

The Egyptian hare is a native of the Valley of the Nile as well as the two deserts. It is remarkable for the length of its ears, which the Egyptians have not failed to indicate in their sculptures; but it is much smaller than those of Europe.

The intelligent Denon has made a just remark on the comparative size of animals common to Egypt and Europe, that the former are always smaller than our own species; and this is exemplified by none more strongly than the hare and wolf.

The *wabber*[*] or *hyrax*, though a native of the eastern desert of Egypt, is not represented in the sculptures; but this is probably owing to its habits, and to their hunting principally in the vallies of the secondary mountains; the wabber only venturing a short distance from its burrow in the evening, and living in the primitive ranges, where the *seäleh*[†] or acacia grows. It was probably the *saphan* of the

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[*] By a singular inadvertency, this has been called a gazelle, in M. Léon Delaborde's Petra. *Vide* the translation, p. 106, 107.

[†] The acacia, or mimosa seyâl.

Bible, as Bruce has remarked, and that enterprising traveller is perfectly correct in placing it among ruminating animals.

In enumerating the wild beasts of the desert, it may not be irrelevant to observe that the hyæna and wolf are seldom met with in unfrequented districts, or any great distance from the Nile, where they would suffer from want of food, and are therefore principally confined to the mountains lying at most a few miles from the edge of the cultivated land. Once only I have met with the wolf on the coast of the Red Sea; and few even of the watering places of the interior of the desert are infested by it, or the hyæna.

The lion is now unknown to the north of Upper Ethiopia: there, however, it is common, as well as the leopard, the *aboomungár**, and other carnivorous beasts; and the abundance of sheep in those districts amply supplies them with food, and has the happy tendency of rendering them less dangerous to man. In ancient times, however, the lion inhabited the deserts of Egypt, and Athenæus mentions one killed by the emperor Adrian, while hunting near Alexandria.† They are even said, in former times, to have been found in Syria ‡, and in Greece.

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* The *aboomungar* is said to be in the Egyptian deserts as well as the *sheeb*. I have not been able to discover what these two animals really are; the former was described to me by the Arabs with a pointed nose, like a wolf, with the power of springing like a leopard, or rather like a dog, and attacking cattle: the latter was said to have a round head and shaggy neck.

† Athen. lib. xv. c. 6.

‡ Sam. xvii. 34. 2 Sam. xxiii. 20. 1 Kings, xiii. 24.

Among the animals confined to the Valley of the Nile, and its immediate vicinity, may be mentioned the ichneumon*, which lives principally in Lower Egypt and the Fyoom, and which, from its enmity to serpents, was looked upon by the Egyptians with great respect. Its dexterity in attacking the snake is truly surprising. It seizes the enemy at the back of the neck, as soon as it perceives it rising to the attack, one firm bite sufficing to destroy it; and when wounded by the venomous fangs of its opponent, it is said by the Arabs to have recourse to some herb, which checks the effect of the deadly poison.

Of the truth, however, of this commonly credited assertion†, I can say nothing; an Arab assured me he had witnessed a fight between a large venomous snake and an ichneumon, which last, whenever it received a bite, ran to a small plant, of which it eat a part, rubbing the wound against the leaves, and then returned to renew the combat; and in order to ascertain the reality of its effect, he plucked up and removed the plant, and having waited to see the wounded animal return in vain to seek it, he became convinced, by its death, that the herb alone had previously saved its life. The Arabs, however, frequently consult their imagination more than their love of truth, and, like many authors of amusing tales, they tell their stories till they believe them true.

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* In Arabic, "nims," or "got Pharaoon," Pharaoh's cat. It is the viverra ichneumon.

† They have the same notion in India.

The ichneumon* is easily tamed, and is sometimes seen in the houses of Cairo, where, in its hostility to rats, it performs all the duties of a cat; but, from its indiscriminate fondness for eggs, poultry, and many other requisites for the kitchen, it is generally reckoned troublesome, and I have often found reason to complain of those I kept.

Eggs are its favourite food, and it is said to have been greatly venerated by those who held the crocodile in abhorrence, in consequence of its destroying the eggs of that hateful animal†: but it is now rarely met with in places where the crocodile abounds; and we may conclude that at all periods its principal recommendation was its hostility to serpents. It is frequently seen in the paintings, where its habits are distinctly alluded to by the Egyptian artists, who represent it in search of eggs, among the bushes, and the usual resorts of the feathered tribe.

The wild cat, the *felis chaus* of Linnæus, is common in the vicinity of the pyramids and Heliopolis, but it does not occur among the pictured animals of ancient Egypt. Nor is the *jerboa*‡, so frequently met with both in the upper and lower country, represented in the sculptures.

The giraffe§ was not a native of Egypt, but of

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* It is often introduced in the sculptures. *Vide* wood-cut, No. 328. *fig.* 20.; and in wood-cut No. 336. it is represented carrying away a young bird from the nest.

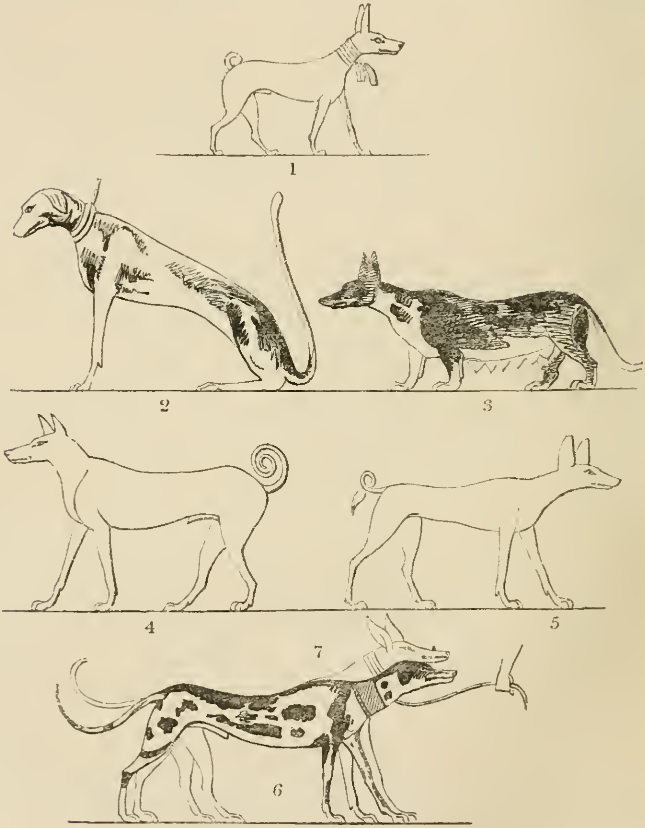
† Diod. i. 35.

‡ Dipus jaculus. It is eaten by the Arabs of Africa. Bruce with great reason supposes it to be the mouse mentioned in Isaiah, lxvi. 17.

§ *Vide* plate 4.

Ethiopia, and is only introduced in subjects which relate to that country, where it is brought with apes, rare woods, and other native productions, as part of the tribute annually paid to the Pharaohs.

The Egyptians had several breeds of dogs*, some solely used for the chase, others admitted



No. 331. Various kinds of dogs, from the sculptures.

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* *Vide* also plate 4., at end of Vol. I.

into the parlour, or selected as the companions of their walks; and some, as at the present day, selected for their peculiar ugliness. All were looked upon with veneration, and the death of a dog was not only lamented as a misfortune, but was mourned by every member of the house in which it occurred.*

The most common kinds were a sort of fox dog, and a hound; they had also a short-legged dog, not unlike our turnspit, which was a great favourite in the house, especially, it appears, in the time of Osirtasen; and it is possible that, as in later days, the choice of a monarch led the taste, or fashion, of the time, to fix upon a particular breed. Of the fox dog, I have found several mummies in Upper Egypt, and it is reasonable to conclude that this was the parent stock of the modern red wild dog of Egypt, which is so common at Cairo, and other towns of the lower country.

Herds of cattle, and flocks of sheep† and goats were numerous; and pigs, though unclean‡, and an abomination to the Egyptians, frequently formed part of the stock of the farm-yard; but they are more rarely represented in the sculptures than other animals. Their cattle were of different kinds, of which three principal distinctions are most deserving of notice, the short, the long horned cattle, and the Indian, or humped ox: and the two last, though no longer natives of Egypt, are common to this day in Abyssinia and Upper Ethiopia.

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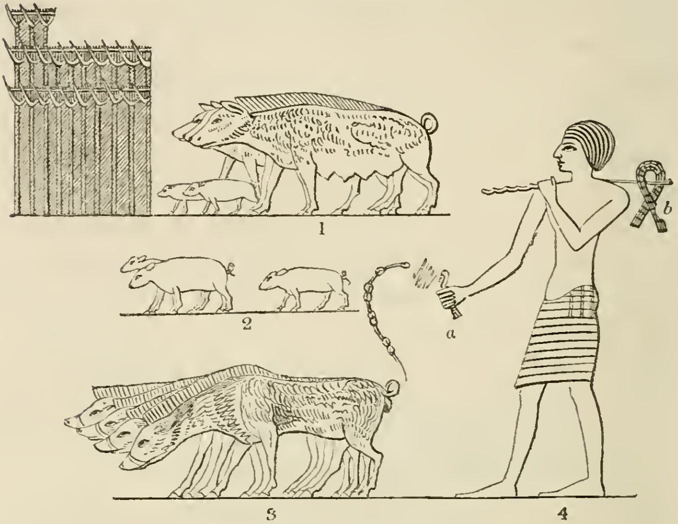
* *Vide infrà*, p. 42.

† I have already observed, on the authority of Diodorus, that sheep in Egypt were twice shorn, and twice brought forth lambs in the year; as at the present day. Homer says those of Libya had lambs thrice in a year. Od. iv. 86.

‡ Herod. ii. 47.

Horses and asses were abundant in Egypt, and the latter were employed as beasts of burden, for treading out corn, particularly in Lower Egypt, and for many other purposes. Like those of the present day, it is probable that they were small, active, and capable of bearing great fatigue; and, considering the trifling expense at which these hardy animals were maintained, we are not surprised to find that they were kept in great numbers in the agricultural districts, or that one individual had as many as seven hundred and sixty employed in different parts of his estate.



No. 332. Pigs; rarely seen in the sculptures. *Thebes.*

1. Sows with young pigs. 2. Young pigs. 3. Boars.
a is a whip, knotted like some of our own. *b* a *gayd*, or noose.

Egyptian horses were greatly esteemed; they were even exported to the neighbouring countries, and Solomon bought them at a hundred and fifty shekels of silver*, from the merchants who traded with Egypt by the Syrian desert.

It is remarkable that the camel, though known to have been used in, and probably a native of, Egypt, as early at least as the time of Abraham (the Bible distinctly stating it to have been among the presents given by Pharaoh to the patriarch†), has never yet been met with in the paintings or hieroglyphics. We cannot however infer, from our finding no representation, or notice of it‡, that it was rare in any part of the country, since the same would apply to poultry, which, it is scarcely necessary to observe, was always abundant in Egypt: for no instance occurs in the sculptures of fowls or pigeons, among the stock of the farm-yard, though geese are repeatedly introduced, and numbered in the presence of the stewards.

The mode of rearing poultry, and the artificial process of hatching the eggs of fowls and geese, I have already mentioned in a former work§, where I have shown the method adopted by the Copts, from their predecessors.||

Many birds, which frequented the interior and skirts of the desert, and were highly prized for the table, were caught in nets and traps, by the fowlers,

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* 1 Kings, x. 28, 29.

† Gen. xii. 16. The name in Hebrew is the same by which the animal is known in Arabic, Gemel, gemelim, "גמלים." *Vide* also Exod. ix. 3.

‡ I have a stone seal found in Nubia, on which two camels are rudely engraved, but it is of uncertain date.

§ Egypt and Thebes, p. 245, 246.

|| Diod. i. s. 74. Pliny, x. c. 54.

as the partridge, *gutta**, bustard†, and quail‡; and waterfowl of different descriptions, which abounded in the Valley of the Nile, afforded endless diversion to the sportsman, and profit to those who gained a livelihood by their sale.

FOWLING.

Fowling was a favourite amusement of all classes; and the fowlers and fishermen, as I have already observed, were subdivisions of one of the castes. They either caught the birds in large clap-nets§, or in traps; and they sometimes shot them with arrows, or felled them with a throw-stick, as they flew in the thickets.

The trap‖ was generally made of network, strained over a frame. It consisted of two semicircular sides or flaps, of equal sizes, one or both moving on the common bar, or axis, upon which they rested. When the trap was set, the two flaps were kept open by means of strings, probably of catgut, which, the moment the bait that stood in the centre of the bar was touched, slipped aside, and allowed the two flaps to collapse, and thus secured the bird.

Another kind, which was square, appears to have closed in the same manner; but its construction was different, the framework running across the centre, and not, as in the others, round the edges of the trap.

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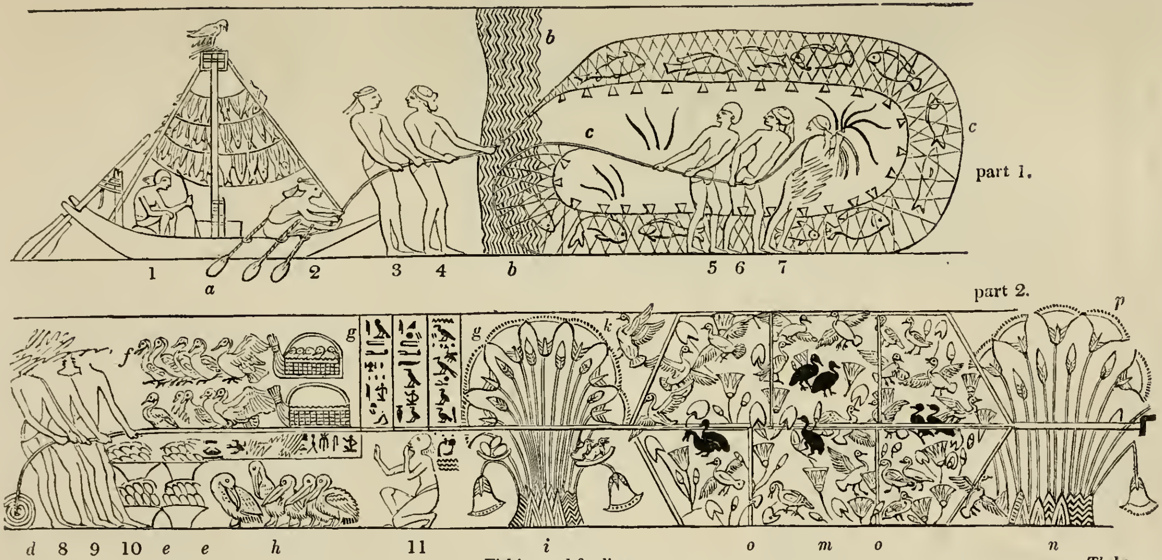
* The Pterocles melanogaster. *Vide* Egypt and Thebes, p. 245.

† The Otis hebàra.

‡ Herod. ii. 77.: Diod. i. 60.; and the sculptures.

§ *V.* wood-cut, No. 333. part ii.

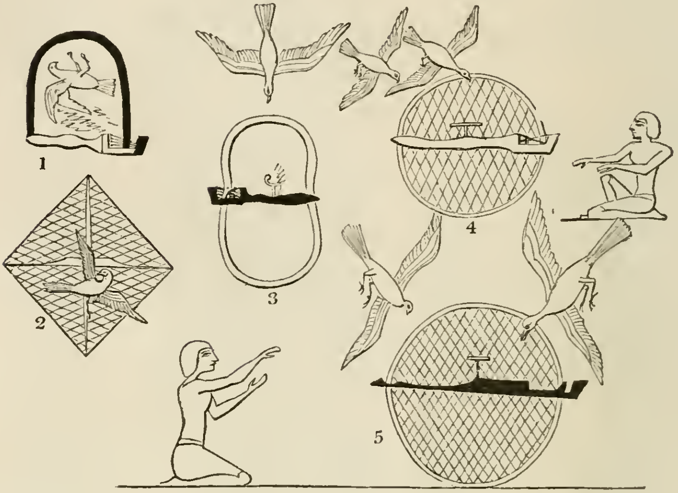
‖ *V.* wood-cut, No. 335.



No. 333. Fishing and fowling scenes. *Thebes.*

Part 1. *a* The boat with the fish hanging up to dry in the sun and wind; on the top of the mast sits a kite. The manner in which it shrieks, while waiting for the entrails of the fish, as they are thrown out, is very characteristically shown in the original painting. The boat is supposed to be close to the shelving bank to which they are dragging the net. The water is represented by zigzag lines at *b*, which, to prevent confusion, I have not continued over the net.

Part 2. Figs. 8, 9, 10, pull the rope that the net may collapse; 1, makes a sign with his hand to keep silence and pull: at p the rope is fixed: at f, g, e, are geese and baskets of their young and eggs: h, are pelicans: 1, and n, plants, probably the papyrus.



No. 334. Bird traps. *Beni Hassan.*
Fig. 1. Trap closed and the bird caught in it; the net work of it has been effaced, as also in fig. 3. The other traps are open.

If their skill in making traps is not proved in those used by the fowlers, it may at least be inferred from that in which the robber was caught in the treasury of Rhampsinitus * ; since the power of the spring, or the mechanism of the catch, was so great that his brother was unable to open it or release him.

They do not seem to have used the bow very generally to shoot birds, nor was the sling adopted, except by gardeners and peasants to frighten them from the vineyards† and fields. The use of the throw-stick ‡ was very general, every amateur chasseur priding himself on the dexterity he displayed with this missile: and being made of heavy wood, flat, and offering little surface to the air in the direction of its flight, the distance to which an expert arm could throw it was considerable; though they always endeavoured to approach the birds as near as possible, under the cover of the bushes or reeds. It was from one foot and a quarter to two feet in length, and about one inch and a half in breadth, slightly curved at the upper end; and its general form may be inferred from one found at Thebes by Mr. Burton, from those of the Berlin Museum, and from the sculptures.

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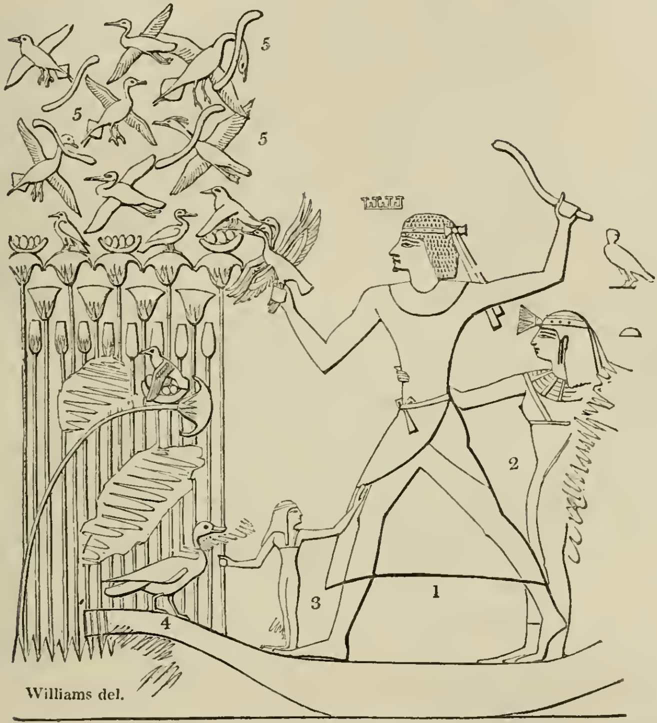
* *Vide* Vol. I. p. 123. † *V.* woodcut, No. 136. Vol. II. p. 149.

‡ The Irish frequently use it for the same purpose.



No. 335. A sportsman using the throw-stick. *Thebes.*
Figs. 2. and 3. his sister and daughter. 4. A decoy bird. 5. 5. Birds struck with the stick.

On their fowling excursions, they usually proceeded with a party of friends and attendants, sometimes accompanied by the members of their family, and even their young children, to the jungles or thickets of the marsh lands, or to the lakes of their own grounds, formed by the waters of the overflowing Nile, at the period of the inundation, when wild fowl was more abundant than at any other season of the year; and seated in punts made of the papyrus*, or rushes of various kinds, they passed without disturbing the birds, amidst the lofty reeds which grew in the water, and masked their approach. This sort of boat was either towed, pushed by a pole, or propelled by paddles; and a religious prejudice induced the Egyptians to believe that persons who used it were secure from the attacks of crocodiles†; a story which can be more readily believed and explained, when we remember that they principally used these boats in the lakes and inland canals, where crocodiles were seldom seen.

The attendants collected the game as it fell, and one of them was always ready to present a fresh stick to the chasseur, as soon as he had thrown. They frequently took with them a decoy bird, which was posted in a convenient place; and in order more effectually to prevent its quitting the post assigned to it, a female was selected for the purpose, whose nest, containing eggs, was brought with it and deposited in the boat.

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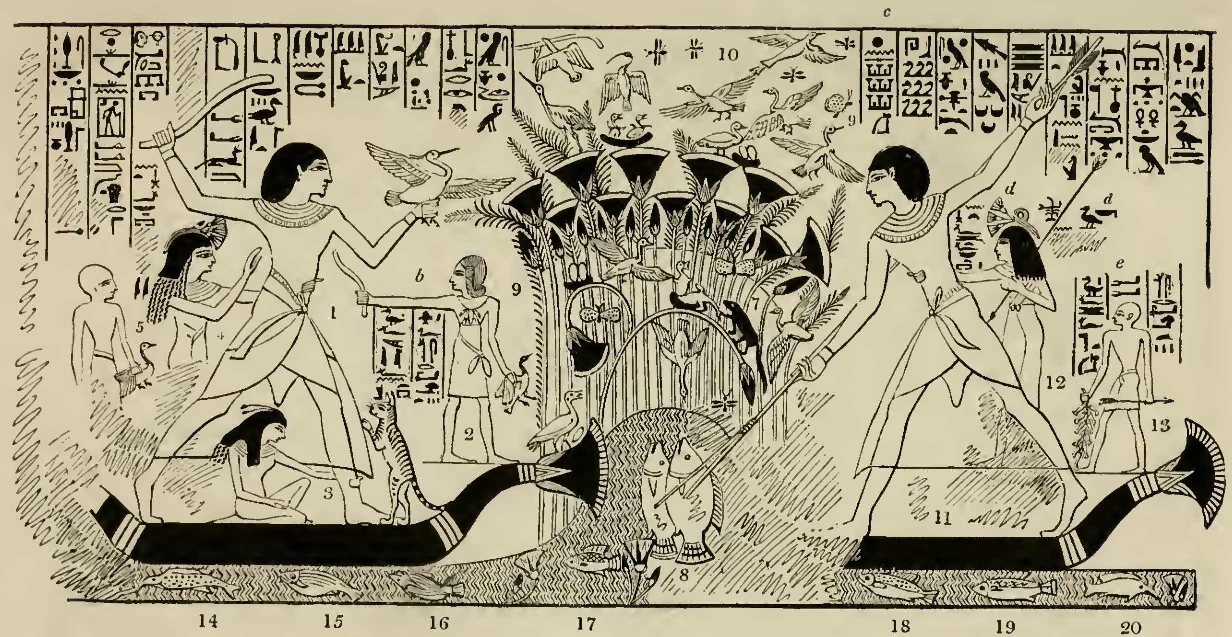
[*] Conf. Lucan, iv. 136.: —
"Conseritur bibula Memphitis cymba papyro." and Plin. xiii. 11.

[†] Plut. de Is. s. 18. "Isis . . . made use of a boat constructed of the reed papyrus, in order to pass more easily through the fenny parts of the country, whence, they say, the crocodile never touches any persons who go in this sort of vessel."

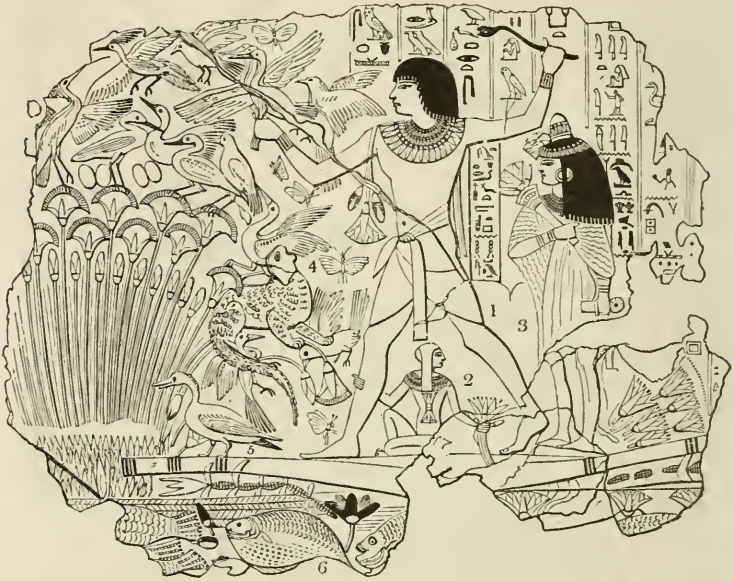


Part 1. Fowling scene. Part 2. Spearing fish with the bident.

Thebes.

1. An amateur sportsman throwing the stick.
2. His son holding a fresh stick ready, and carrying the game.
3, 4. His daughter, or sisters. 5. Another son carrying the game.
6. A decoy bird, with its nest in the boat.
7. The ichneumon carrying away a young bird from a nest.
8. Two bulti fish speared with the bident of fig. 11.
9, 10. Butterflies and dragon flies.
12. His sister holding a spear.
13. His son holding a spear, and carrying the fish strung upon a water plant.
The cat appears as if begging to be let out of the boat into the thicket.

A favourite cat sometimes attended them on these occasions, and from the readiness with which it is represented to have seized the game, the artist has intended to show that those animals acted as retrievers, or were trained to catch the birds; being let out of the boat into the thickets which grew at the water's edge: though making every allowance for the great skill attributed to the Egyptians in taming and training animals, it is difficult to persuade us that the cat could be induced, on any consideration, to take the water, in quest of a fallen bird.



No. 337. Sportsman using the throw-stick. *British Museum.*
Fig. 2. keeps the boat steady by holding the stalks of a lotus. 4. A cat seizing the game in the thicket. 5. A decoy bird.

That cats, as well as dogs, were looked upon with great esteem by the Egyptians, is evident from the care they took to preserve and embalm them, and from the express statements of ancient writers. Herodotus* mentions the concern they felt at their loss, and the general mourning that ensued in a house, even if they died a natural death; every inmate being obliged to shave his eyebrows, in token of sorrow, for the loss of a cat, and the head and whole body for the death of a dog. When ill, they watched and attended them with the greatest solicitude; and, if any person purposely, or even involuntarily†, killed one of these revered animals, it was deemed a capital offence; nor could all the influence of the magistrates, nor even the dread of the Roman name prevent the people from sacrificing to their resentment an incautious Roman who had killed a cat, though it was evident that he had done it unintentionally.

"So deeply rooted in their minds," says Diodorus, "was the superstitious regard for the sacred animals, and so strongly were the passions of every one bent upon their honour, that, even at this time, when Ptolemy had not yet been called a king by the Romans, and the people were using every possible effort to flatter the Italians, who visited the country as strangers, and studiously avoided any thing which could excite disputes, or lead to war, on account of their dread of the consequences, they positively refused to restrain their anger, or to spare the offender."

Some remains of this prejudice in favour of the cat[*] may still be traced among the modern Egyptians, who even allow it to eat from the same dish[†], and to be the constant companion of their children; though the reputed reason of their predilection for this animal is its utility in watching and destroying scorpions, and other reptiles, which infest the houses.

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* Herod. ii. 66.

† Diod. i. 83.

Dogs are not regarded by them with the same feelings; they are considered unclean, and are seldom admitted into the house, except by some persons of the Málekee sect, who do not, like the Shaffaees, and Hanefees, consider themselves defiled by their touch. But though they draw this marked distinction between them, the character given to the two animals appears to be in favour of the dog; which they represent, in the true spirit of oriental fable, when asked hereafter respecting the treatment it received from man, concealing all the numerous injuries it has received, and magnifying the few benefits, while the cat is supposed to deny the obligations conferred upon it, and to endeavour to detract from the merits of its benefactor.

Though the death of a cat is not attended with lamentations or funeral honours, it is looked upon by many of the modern Egyptians to be wrong to kill, or even to illtreat them: and some have carried their humanity so far as to bequeath by will a fund for their support, in compliance with which these animals are daily fed in Cairo at the Cadi's court, and the *bazár* of Khan Khaleel.

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[*] They are much more tractable and attached in Egypt than in Europe. The cat and dog are not there the emblems of discord.

[†] This is a general custom with the Moslems.

The clap net was of different forms, though on the same general principle as the traps already mentioned. It consisted of two sides or frames, over which the network was strained; at one end was a short rope, which they fastened to a bush, or a cluster of reeds, and at the other was one of considerable length, which, as soon as the birds were seen feeding in the area within the net, was pulled by the fowlers, causing the instantaneous collapsion of the two sides.* The Egyptian nets were very similar to those used in Europe at the present day, but probably larger, and requiring a greater number of persons to manage them than our own; this, however, may be attributed to an imperfection in their contrivance for closing them.

As soon as they had selected a convenient spot for laying down the net, in a field or on the surface of a pond, the known resort of numerous wild fowl, they spread open the two sides or flaps, and secured them in such a manner that they remained flat upon the ground, until pulled by the rope. A man, crouched behind some reeds, growing at a convenient distance from the spot, from which he could observe the birds as they came down, watched the net†, and enjoining silence by placing his hand over his mouth, beckoned to those holding the rope to keep themselves in readiness, till he saw them assembled in sufficient numbers, when a wave of his hand gave the signal for closing the net.

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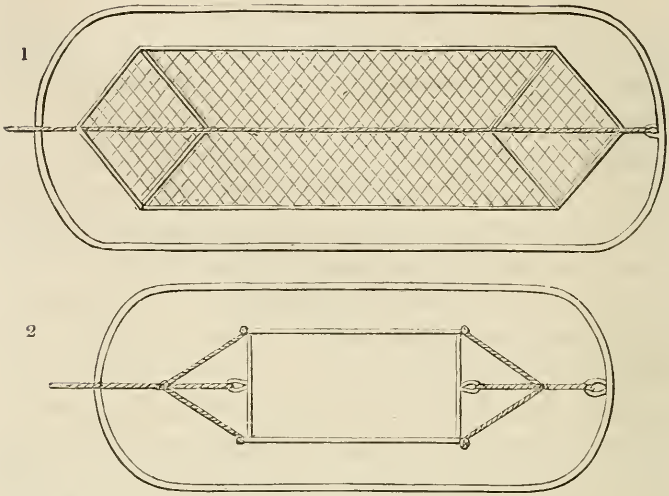
* *Vide* wood-cut, No. 333. part 2.

† He was styled λινοπτηϛ by the Greeks. J. Pollux, v. 4.



No. 338. Clap nets, from the sculptures.

The sign adopted by the Egyptians to indicate silence is evidently shown, from these scenes, to have been given by placing the hand over the mouth; not, as generally supposed *, by approaching the forefinger to the lips; and the Greeks erroneously concluded, that the youthful Harpocrates was the deity of silence, from his appearing in this attitude; which, however humiliating to the character of a deity, was only illustrative of his extreme youth, and of a habit common to children in every country, whether of ancient or modern times.

Some nets were of a single piece, stretched over a frame; others were furnished with addi-

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* And by Plutarch, De Isid. s. 68.

tional sections of a diamond shape*, and in some the interior portion was surrounded by an outer circuit of an oval form, to which the ring of the rope was attached.

It is probable that the ancient Egyptians adopted the same ingenious method of catching ducks, widgeons, and other water fowl, as the modern inhabitants of Lower Egypt †; who, when the inundation covers the lands, creep unperceived to the water's edge, and placing a gourd upon their head, with two holes cut in front, through which they look, swim towards the unsuspecting birds, and taking them one after the other by the legs, suddenly pull them under the water, and tie them to their girdle; thus, in a short space of time, securing great numbers, without alarming the rest.

The birds taken in nets were principally geese, ducks, quails, and some small kinds which they were in the habit of salting, especially in Lower Egypt, where Herodotus ‡ tells us they "ate quails, ducks, and small birds undressed, having merely preserved them in salt, living at the same time on all sorts of birds and fish, not reckoned sacred, which were eaten either roasted or boiled." For though geese constituted a very great portion of the food of the Egyptians, both in the upper and lower country, and are more frequently represented in the sculptures than any bird, it is not to be supposed that they were preferred to the

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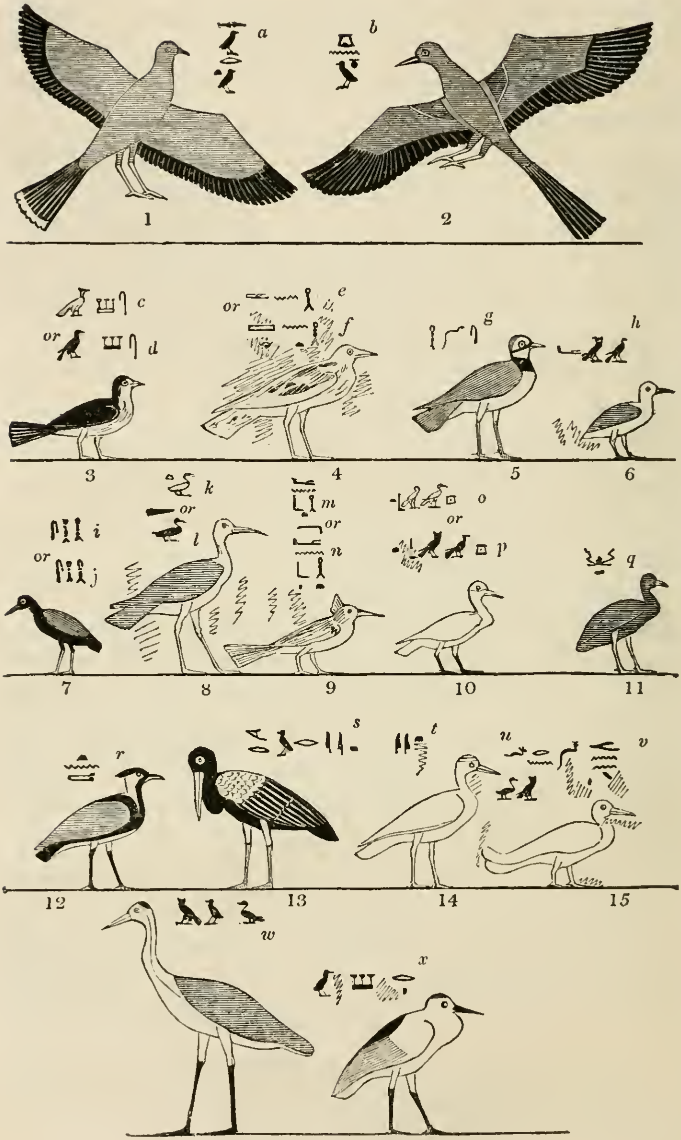
* This calls to mind the nets mentioned by J. Pollux, v. 4., of which a square part termed the *βροχος* became *ῥομβοειδες*, of a rhomboïdal figure, as soon as the net (*αρκυς*) was stretched.

† The same is done in India.

‡ Herod. ii. 77.



No. 339. Some of the birds of Egypt. *Beni Hassan.*

exclusion of others; and besides poultry and pigeons, which abounded in Egypt, many of the wading tribe, the curlew, the *ardea*, and several others were esteemed for the table, and even introduced among the choice offerings presented to the gods. The practice of salting birds, in a country like Egypt, may, perhaps, be considered singular; but confirmation of the statement of Herodotus is derived from the sculptures, where some poulterers appear to be in the act of preserving them in this manner, and depositing them in jars.*

Independent of the birds taken in nets, and by other means, the Egyptian poulterers supplied the market with the eggs of those most in request; they also reared the young after the eggs were hatched, (which was frequently done, as already observed, by an artificial process,) and these were sold to supply the poultry-yards of the rich, whose stock of wild fowl was often numerous.

The various birds represented in the Egyptian sculptures, cannot always be recognised with certainty, in consequence of the loss of the colours, or a want of skill in their artists, who, disregarding the intermediate hues, adopted certain fixed colours, in a conventional manner, as an approximation; and unless the character of the birds is so marked as to be readily distinguished by a simple outline, it is often difficult to identify them.

In some, however, there is sufficient to guide us without the necessity of conjecture, and these I

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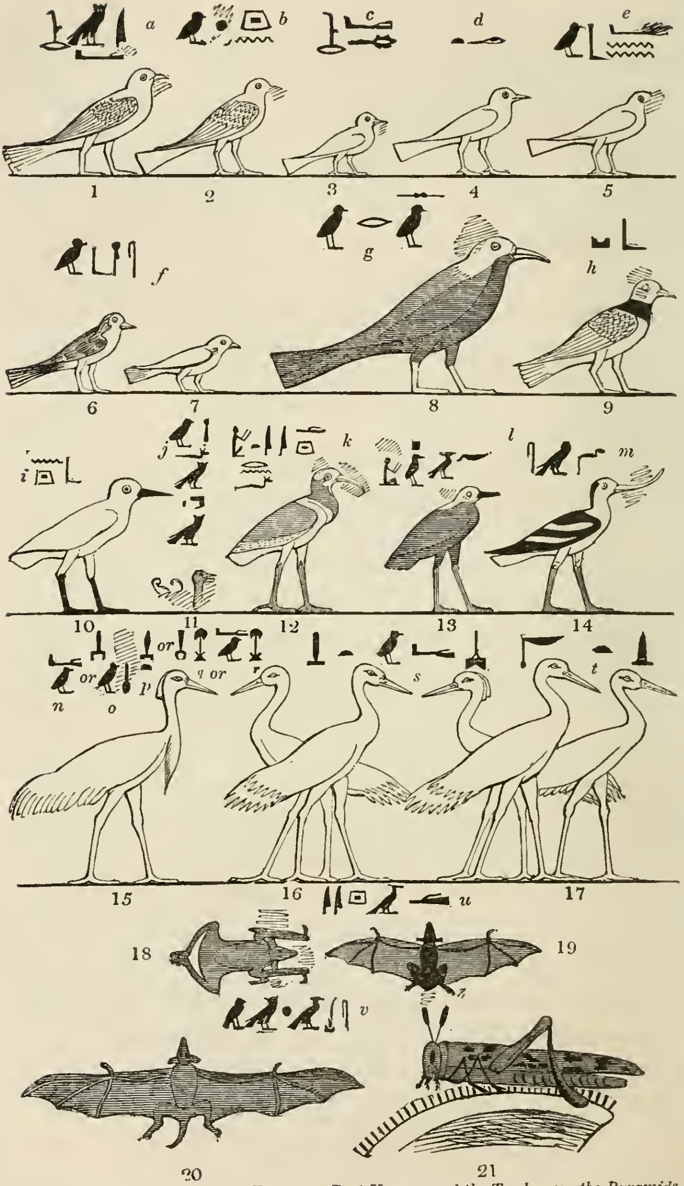
* *Vide* wood-cut, No. 80.



No. 340 Some of the birds of Egypt. *Beni Hassan, and the Tombs near the Pyramids.*
Figs. 18, 19, 20, Bats. 21, The locust. *From Thebes.*

shall notice in their proper order, without distinguishing between such as were forbidden, or admitted at an Egyptian table.

BIRDS OCCURRING IN THE SCULPTURES.

1. Raptores.	
Vultur Nubicus.	The large vulture of Egypt and Nubia, which occurs frequently on the ceilings and sculptures of the temples.
Vultur percnopterus.	The small white vulture, called also Pharaoh's hen.
Aquila.	The eagle.
Falco cinereo-ferrugineus. *Fors.*	The kite, or Miluus. Falco arda of Savigny.
Falco ——— ?	The sacred hawk.
Falco tenunculoïdes.	The common brown hawk.
Bubo maximus.	Horned owl.
Strix flammea.	White owl.
Strix passerina.	Small owl.
2. Insessores.	
Lanius excubitor ?	Great shrike, or butcher bird ?
Corvus corax.	The raven.
Corvus cornix.	The Royston crow.
Turdus viscivorus.	Missel thrush.
Alauda cristata.	Crested lark.
Alauda arenaria.	Sand-coloured-lark.
Upupa epops.	Hoopoe.
Hirundo rustica.	The swallow.
Alcedo ispida.	Common king-fisher.
Fringilla; several species.	Finches.
3. Rasores, or Gallinaceous.	
Columba turtur.	Turtle-dove.
Pterocles melanogaster.	The *Gutta.**
Perdix coturnix.	The quail.
Otis Hebara ?	Ruffed bustard ?
Struthio camelus.	The ostrich.
4. Grallatores, wading birds.	
Ardea garzetta.	Small white stork : the Ar. Virgo of Hasselquitz.
Ardea cinerea.	Grey heron.
Ardea ciconia; and some other species.	White stork.
Tantalus, or Numenius, Ibis.	The ibis.
Platalea.	Spoonbill.

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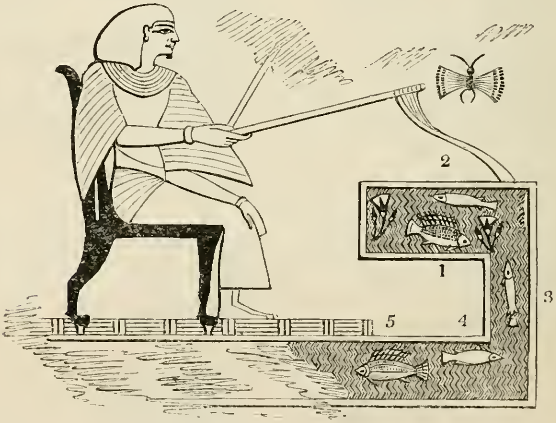
* This name has been given it in Arabic from the noise it makes when alarmed and flying.

Charadrius armatus.	Spur-winged plover.
Scolopax gallinago.	Snipe.
Fulica atra ?	The common coot ?
5. Natatores, swimming birds.	
Anser Ægyptius ; and other species.	Egyptian goose.
Anas ; various species.	Ducks.
Anas creca.	Teal.
Recurvirostra avosetta.	Avoset.
Pelicanus onocratulus.	The pelican.

Many other birds are figured in the sculptures ; but as it is difficult to determine the exact species to which they belong, I shall not hazard any conjecture upon their names, having noticed those which most commonly occur. In the tombs of Thebes and Beni Hassan the Egyptians have not omitted to notice bats, and even some of the insects, which abound in the Valley of the Nile ; and the well known locust*, the butterfly†, and the



No. 341. An Egyptian gentleman fishing. *Thebes.*

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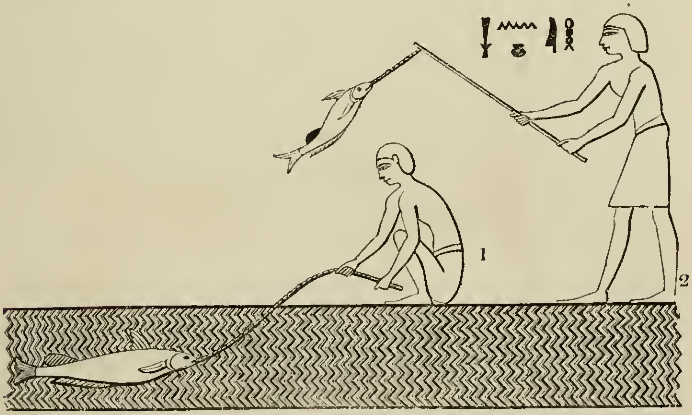
* *Vide* wood-cut, No. 340. fig. 21.
† *Vide* wood-cuts, Nos. 336, 337, and 341.

beetle are occasionally introduced in the fowling scenes, and in sacred subjects.

FISHING.

Fishing was an amusement in which the Egyptians particularly delighted; and not contented with the abundance afforded by the Nile, they constructed within their grounds spacious "sluices or ponds for fish*," like the *vivaria* of the Romans, where they fed them for the table, and where they amused themselves by angling†, and the dexterous use of the *bident.*

These favourite occupations were not confined to young persons, nor thought unworthy of men of serious habits; and an Egyptian of consequence is frequently represented in the sculptures, catching fish in a canal or lake with the line, or



No. 342. Fishing with ground bait. *Beni Hassan.*
These fish are the *Shilbeh*, or rather the Arábrab.

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* Isaiah, xix. 10.

† Isaiah, xix. 8.

spearing them, as they glided past the bank. Sometimes the angler posted himself in a shady spot at the water's edge, and having ordered his servants to spread a mat upon the ground, he sat upon it as he threw the line ; and some with higher notions of comfort used a chair for the same purpose. The rod was short, and apparently of one piece ; the line usually single, though instances occur of a double line, each furnished with its own hook, which, judging from those I have found, was of bronze.

The fishermen, who, as I have observed, composed one of the subdivisions of the Egyptian castes, and who gained their livelihood by fishing, generally used the net in preference to the line, but on some occasions they employed the latter, seated or standing on the bank. It is, however, probable, that these were people who could not afford the expence of nets ; and the use of the line is generally confined, in like manner, at the present day, to the poorer classes*, who depend upon skill, or good fortune, for their subsistence.

In all cases they adopted a ground bait, as is still the custom in Egypt, without any float ; and though several winged insects are represented in the paintings hovering over the water, it does not appear that they ever put them to the hook, and still less that they had devised any method similar to our artificial fly-fishing ; which is still unknown to the Egyptians, though the fish of the Nile are occasionally seen to rise to insects on the water's surface.

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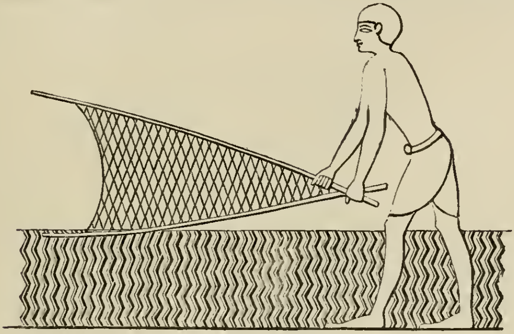
* *Vide* vignette D., at the head of chap. iv. Vol. II.

The ordinary Egyptian net has been already mentioned*, as well as the mode of dragging it to the shore; but it sometimes happened that they used a smaller kind, for catching fish in shallow water, furnished with a pole on either side, to which it was attached; and the fisherman holding one of the poles in either hand, thrust it below the surface of the water, and awaited the moment when a shoal of fish passed over it; the same being probably used for landing those which had been wounded with the spear, or entangled with the hook.†



No. 343. A sort of landing net. *Thebes.*

When they employed the drag-net, and even when they pulled it to the shore, a boat sometimes attended, in which the fish were deposited as soon as they were caught; those intended for immediate use, to be eaten fresh, being sent off to market when the day's sport was finished; and the others being opened, salted, and hung up to dry in the sun.

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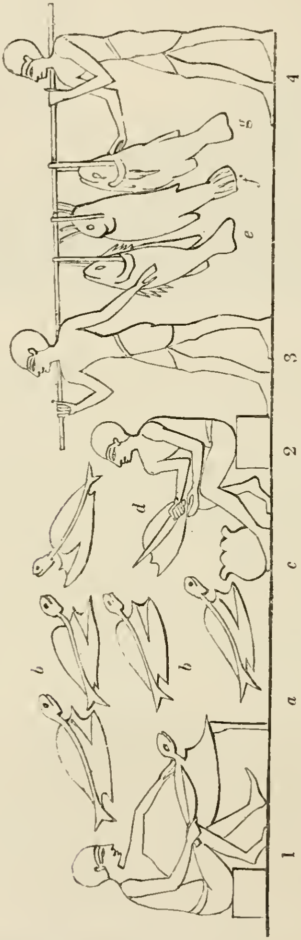
* Vol. II. p. 21.

† *Vide* wood-cut, No. 343.

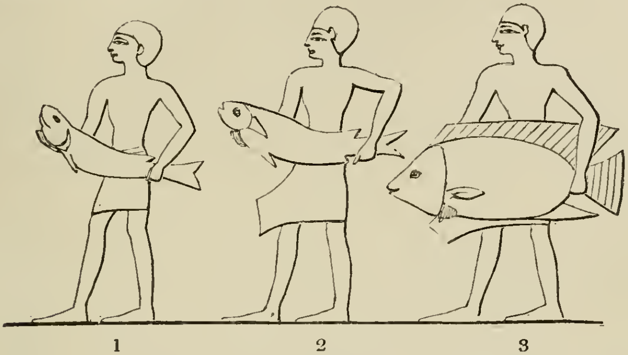
Some were cut in half, and suspended on ropes for this purpose, the passing current of air being found to accelerate the process; sometimes the body was simply laid open with a knife from the head to the tail, the two sides being divided as



No. 344. Bringing in fish and opening them, preparatory to their being salted.

In a tomb near the Pyramids.

far as the back bone; and many were contented with taking out the intestines, and removing the head, and tip of the tail, and exposing them, when salted, to the sun.



No. 345. Another mode of carrying large fish. *Tomb near the Pyramids*

When caught, the small fish were generally put into baskets, but those of a larger kind were suspended to a pole, borne by two or more men over their shoulders; or were carried singly in the hand, slung at their back, or under the arm; all which methods I have seen adopted by the modern fishermen, at the Cataracts of E'Sooan, and in other parts of Egypt.

Salted, as well as fresh fish, were much eaten* in Egypt, both in the Thebaid and the lower country, as the sculptures and ancient authors inform us; and at a particular period of the year, on the 9th day of the first month (Thoth)†, every person was obliged, by a religious ordinance, to eat a fried fish before the door of his house, with the exception of the priests, who were contented to burn it on that occasion.*

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* Conf. Herod. ii. 92. Diod. i. 36. Perhaps the ταρικη Αιγυπτια of Julius Pollux, Onom. vi. 9.

† The first of Thoth corresponded with the 29th of August. *Vide* Vol. I. p. 275.

Some fish were particularly prized for the table, and preferred as being more wholesome, as well as superior in flavour to others; among which we may mention the *búlti* †, the *gisher* ‡, the *benni* §, the *shall* ||, the *shilbeh* ¶ and *arábrab*, the *byad* **, the *garmoot* ††, and a few others; but it was unlawful to touch those which were sacred, as the oxyrinchus, the phagrus, and the lepidotus: and the inhabitants of the city of Oxyrinchus objected even to eat any fish caught by a hook, lest it should have been defiled by the blood of one they held so sacred. ‡‡

The oxyrinchus, I have elsewhere observed §§, was probably the *mizdeh*, a mormyrus remarkable among the fish of the Nile for its pointed nose || ||, as the word oxyrinchus implies; and, the resemblance of the Coptic name of that city, which was called Ḿge, to that of the fish, strongly favours this opinion.

The phagrus was the eel, and the reason of its sanctity, like that of the former, was probably owing to its unwholesome qualities; the most effectual method of forbidding its use being to assign it a place among the sacred animals of the country.

The lepidotus is still uncertain; its name proves it to have been a scaly fish, but the various

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* Plut. De Is. s. 7.

† Or *booltee*, Labrus Niloticus.

‡ Perca Nilotica.

§ Cyprinus Benni.

|| Silurus Shall.

¶ The Silurus Schilbe Niloticus.

** Silurus Bajad.

†† Silurus Carmuth.

‡‡ Plut. de Isid. s. 7.

§§ Egypt and Thebes, p. 366.

|| || *V.* wood-cut, No. 366. figs. 14. 20., and No. 81. fig. 1. p. 20. Vol. II.

conjectures of naturalists have led to nothing satisfactory respecting it. Linnæus believed it to be a carp, the *cyprinus rubescens Niloticus;* Sicard preferred the *benni*, and others the *bulti*, or the *gisher;* but if I may be pardoned for venturing a conjecture, there appears to be more reason to suppose it the *kelb el bahr**, called the dogfish of the Nile; which, though a wholesome fish†, might, from its appearance, create a prejudice in the minds of a superstitious people, sufficient to forbid its introduction at table, and obtain for it a place among their sacred fish: nor do I know of an instance of its introduction in the Egyptian sculptures.

Like the sacred quadrupeds, they were not all regarded with the same reverence in different parts of the country‡; Plutarch even states that these three fish were generally held in aversion § by the Egyptians; and the people of Cynopolis, according to the same author ||, were in the habit of eating the oxyrinchus, which, he adds, "was the origin of a civil war between the two cities, till both sides, after doing each other great mischief, were severely punished by the Romans."

Of all fish the *bulti* ¶ was evidently preferred, and not, indeed, without reason, being still considered

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* Salmo Dentex, which has very large scales.

† The fish, in Egypt, are considered better after October than in the summer months: they think that fish with scales are the only kind wholesome even in winter.

‡ Another fish, the latus, was worshipped at Latopolis in the Thebaïd.

§ Plut. De Isid. s. 18.

|| Plut. De Isid. s. 72.

¶ It is represented in wood-cut, No. 341. figs. 1. & 5. No. 81. *c*. and *g*. No. 336. fig. 8., &c.

inferior to none produced in the Nile. Many others, not readily ascertained from the mode of representing them, occur in the sculptures of Upper and Lower Egypt, and we even find the eel and the *mizdeh* introduced among those at Beni Hassan and other places; but the difficulty, which this at first sight appears to present, is readily explained by the observation I have already made, of their having been held sacred in some, and not in other, cities, or districts of Egypt.

The favourite mode of fishing, among those who took a pleasure in it, and prided themselves on their skill, was with the bident spear. They sometimes stood on the bank of a canal, but generally used a punt, or boat made of papyrus*, in which they glided smoothly over the lakes, and canals, within their own grounds, without disturbing the fish as they lay beneath the broad leaves of the lotus plant. The custom of angling for amusement, and spearing with the bident, may be considered peculiar to the higher orders, and while the poorer classes employed the net and hook, as already stated, the use of the spear was confined to the sportsman.

The bident was a spear with two barbed points, which was either thrust at the fish with one, or both hands, as they passed by; or was darted to a short distance, a long line fastened to it preventing its being lost, and serving to secure the fish when struck. It was occasionally furnished with feathers at the upper extremity, like an arrow, to assist in its distant flight, and sometimes a common spear was used for the purpose; but in most cases, it was provided with a line, whose end was held by the left hand, or wound upon a reel. The same mode of fishing is still adopted by many people who live on the sea-coasts; and the fish spears of the South Sea islanders have two, three, and four points, and are used nearly in the same manner, and with the same dexterity, as the bident by the ancient Egyptians.

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* The name of papyrus, or byblus, was applied to more than one plant of the genus cyperus, as I shall have occasion to show.

On these occasions they were usually accompanied by a friend, or some of their children, and by one or two attendants, who assisted in securing the fish, and who, taking them off the barbed point of the spear, passed the stalk of a rush through the gills, and thus attached them together, in order more conveniently to carry them home.*

I have frequently had occasion to mention boats made of the byblus or papyrus. It is evident that this plant, from its great value and from its exclusive cultivation in certain districts, where it was a government monopoly, could not have been applied to the many purposes mentioned in ancient authors; we may therefore conclude, that several plants of the genus *cyperus* were comprehended under the head of byblus or papyrus. This is not only in accordance with probability, from their general resemblance, but is expressly stated by Strabo†, who says, that "much grows in the lower part of the Delta, where one kind is of an inferior, the other of a superior quality, and this last is known by the distinctive appellation of Hieratic Byblus. That the profits arising from its sale may be increased, they have adopted the same plan which was devised in Judæa, regarding the date tree and balsam, permitting it to grow only in certain places; so that its rarity increasing its value, they benefit themselves at the expense of the community." And that under the name "papyrus" he includes other kinds of cyperus produced spontaneously in the marshy lands, is evident from his observing that, "the papyrus does not grow in great quantity about Alexandria, because it is *not cultivated* there:" and Pliny*, and other writers, show that the plant to which they frequently applied this name was wild in many parts of Egypt.

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* *Vide* wood-cut, No. 336. fig. 13.

† Strabo, lib. xvii. p. 550. ed. Cas.

There is therefore reason to believe, that several species were comprehended under the general appellation of byblus or papyrus; the *cyperus* dives, which grows to the height of five or six feet, is still cultivated in Egypt for many of the purposes to which the papyrus plant is said to have been applied; and I have no doubt, that this was the species commonly employed in former times for making mats, baskets, parts of sandals, papyrus boats, and for other ordinary uses; the cyperus papyrus, or papyrus (byblus) hieraticus of Strabo, being confined to the manufacture of paper.

The great abundance of fish † produced in the

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* Plin. xiii. 11. According to one reading Pliny says, "All the paper is grown in the Sebennytic nome;" but another gives, "nothing but paper is grown" there, which is evidently the sense required; "non nisi charta," for "omnis charta," as he afterwards mentions its being found in other parts of Egypt. *V. infra* on the manufacture of paper.

† Strabo, xvii. p. 566. Diod. i. 36. 43. and 52.

Nile was an invaluable provision of nature, in a country which had neither extensive pasture lands, nor large herds of cattle, and where corn was the principal production. When the Nile inundated the country and filled the lakes and canals with its overflowing waters, these precious gifts were extended to the most remote villages in the interior of the Valley, and the plentiful supply of fish, they then obtained, was an additional benefit conferred upon them at this season of the year. The quantity is said* to have been immense, as indeed it is at the present day †; and the shoals of small fish, which then appear in the canals and ponds, call to mind, and confirm, a remark of Herodotus, respecting their numbers at the rising Nile. His explanation of the cause of their apparently sudden production is inadmissible and unnecessary, as the ponds were always filled by artificial or natural ducts; and the same species of young fry which are found there, appear at the same time in the river; nor are they of any particular kind ‡, but the young of the various fish inhabiting the Nile.§

Herodotus mentions a large sum annually produced by the fisheries of the lake Mœris. "During six months," says the historian ||, "the water of

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* Herodot. ii. 93. Strabo, loc. cit.

† Michaud says that the lake Menzaleh now yields an annual revenue of 800 purses, (5,600*l.*). *V.* Correspond. de l'Orient. tom. vi. let. 156.

‡ *Vide* De Sacy's Abd-al-latif, note 141., in lib. i. c. 4.

§ I have caught a small net full of them, and on examination found them to be of the *silurus shall* and other common species; and no one who has eaten them at table can have failed to observe that they are of different kinds, from the greater or less quantity of bones they contain.

|| Herodot. ii. 49.

the river flows into it, and during the remaining half of the year, it returns from the lake into the Nile. At this time, while the water is retiring, the profits derived from the fisheries, and paid daily into the royal treasury, amount to a talent of silver* (193*l.* 15*s.* English†); and during the other six months, when the water flows from the Nile into the lake, they do not exceed twenty minæ‡" (about 64*l.* 12*s.*). Diodorus says, that when Mœris, from whom the lake derived its name, and who was supposed to have made the canal, had arranged the sluices for the introduction of the water, and established every thing connected with it, he assigned the sum annually derived from this source as a dowry to the queen, for the purchase of jewels, ointments, and other objects connected with the toilet. The provision was certainly very liberal, being a talent every day, or upwards of 70,700*l.* a year§; and when this formed only a portion of the pin-money of the Egyptian queens, to whom the revenues of the city of Anthylla, famous for its wines, were given for their dress||, it is certain they had no reason to complain of the allowance they enjoyed.

I have frequently had occasion¶ to notice the

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[*] Reckoning the talent at 60 minæ.

[†] Some compute it to be 225*l.*

[‡] The mina was 3*l.* 4*s.* 7*d.*

[§] Diodor. i. 52. From all the fisheries of Egypt would have been less improbable. The lake Mœris is now farmed for 30 purses (210*l.*) annually. Of 90 piastres, from the sale of the fish, 10 are paid for the boat, 40 to the fishermen, and 40 to the farmers of the fish. There are only now six boats on the lake.

[||] Herodot. (ii. 98.) says, "for their sandals;" Athenæus (Deipn. i. 25.) "for their dress;" a privilege continued to the queens of Persia, after Egypt was conquered by Cambyses.

[¶] *Vide* Egypt and Thebes, p. 354; and *suprà*, Vol. I. p. 93.

error of Herodotus, in confounding the lake Mœris with the canal, and have proved from Pliny*, that the name was also applied to the canal which conducted the water from the Nile, to what is now called the Birket el Qorn; and in order to show the impossibility of the return of the waters from the lake itself to the higher level of the Nile, and that Herodotus did not judge from his own observation, but mistook the facts detailed to him by his Egyptian informants, who had in view the canal alone, when speaking of the return of the water to the river, I shall repeat what I before remarked on this subject.†

"Herodotus's account of the water returning from the lake to the Nile, on the subsiding of the inundation, is totally inapplicable to the lake Mœris, the level of its surface being about 100, or 120 feet lower than the bank of the Nile at Benisooef; which, making every allowance for the rise of the bed of the river, and the proportionate elevation of its banks, could never have been on a level, even in Herodotus's time, with the lake Mœris; and consequently no return of the water could have taken place from the lake to the Nile. From the canal, however, it could, as at the present day; and the fish caught at the mouth of this and other canals, at that season, still afford a considerable revenue to the government, and are farmed by certain villages on the banks. That the level of the lake Mœris must be now about the same as formerly, is evident from our finding ruins of baths on its borders; and the accidental and temporary rise of its waters, which happened some years since, was merely owing to the bursting of the great dyke at Toméëh. As to the Bathen of the great geographer D'Anville, it is quite Utopian."

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* Plin. xxxvi. 12. "Ubi *fuit* Mœridis lacus, hoc est fossa grandis."
† Egypt and Thebes, p. 358.

The quantity of fish now caught in the lake Mœris itself, or Birket el Qorn, is very great, and supplies the markets of the Fyoom with abundance and variety of the finest kind — superior, certainly, in flavour to those of the Nile, though of the same species; but it is probable that the saline quality of the water may effect the slight change observable in the lake fish. I do not believe it produces any species, or even varieties, differing from those of the Nile, from whence, doubtless, it derived its original stock; and the twenty-two kinds it produced, according to the information of Diodorus *, do not appear to have been at any time considered different from those of the parent stream.

Like that of the canals, the lake fishing is farmed by the government to some rich inhabitants of the district †, who are usually Copt Christians; and the fish, as in former times, are either taken fresh to the market, or are dried and salted, as Diodorus observes in his notice of the lake; though the number of persons ‡ engaged in this occupation bears a very small proportion to that of former times.

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[*] Diod. i. 52. *Vide* Strabo, lib. xvii. p. 566., on the Nile fish.

[†] The small village of Agalteh, at Thebes, pays annually 1500 piastres, about 21*l*., to government for the fish of its canal.

[‡] Diod. loc. cit. "They say that 22 kinds of fish are found in it (the lake Mœris), and so large a number is caught, that the numerous salters who are constantly employed there, can with difficulty get through the work imposed upon them."

This custom of farming the fisheries was probably derived by the Arab government from their predecessors; it does not, however, seem to have been adopted by them at their first occupation of the country, but was introduced subsequently, since the Arab historian El Makrisi mentions it as a new idea. The method employed was doubtless similar to that of ancient times, which continues to the present day; and the passage is so curious, that I shall introduce it from the translation given by the learned M. Silvestre de Sacy.*

" Quant à la pêche, c'est-à-dire, aux alimens que Dieu procure aux hommes par la pêche du fleuve, le premier administrateur qui en a fait un objet de revenu pour le fisc, c'est encore Ebn-Modabbir: il établit un bureau exprès pour cela; mais ne voulant pas donner à ce bureau la dénomination de bureau des pêches, qui lui paroissoit ignoble, il le nomma le bureau pour la plantation des pieux, et l'établissement des filets. Cette nouvelle invention fiscale se soutint. On députoit pour la recette de ce droit un inspecteur, des notaires, et un *cateb*, en divers cantons de l'Egypte, tels que le canal d'Alexandrie, le lac d'Alexandrie, celui de Nestarawa, Damiette, les cataractes d'Oswan, et plusieurs autres étangs et lacs. Ces commissaires partoient pour leur mission, au moment où le Nil commençoit à décroître, et les eaux à se retirer de-dessus les terres qu'elles avoient couvertes, pour rentrer dans le lit du fleuve. Antérieurement à cela, on avoit fermé les ouvertures pratiquées dans les chaussées, et les arches des ponts, au moment où le Nil avoit cessé de croître, afin d'empêcher les eaux de se retirer dans le fleuve, et de les forcer à s'accumuler du côté voisin des terres. Alors on plaçoit des filets, et on laissoit l'eau prendre son cours; le poisson, entrainé par le courant de l'eau, arrivoit aux filets, qui l'empéchoient d'aller plus loin, et de redescendre avec l'eau; il s'amassoit donc dans les filets. On le tiroit ensuite à terre, on le déposoit sur des tapis, on le saloit, et on le mettoit dans des vases; et, lorsqu'il étoit suffisamment fait, on le vendoit sous le nom de *salaisons*, et de *sir*. On ne préparoit ainsi que le poisson qui étoit de la taille du doigt et au-dessous. Cette même espèce, quand elle est fraîche, se nomme *absaria;* on la mange rôtie et frite."

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* In his Rélation de l'Egypte of Abd-al-latif, p. 283. note.

The great consumption of fish in ancient Egypt is not only attested by Herodotus and other writers, but by the sculptures of the upper and lower country; and the Bible makes allusion to the "fishers"* of the Nile, "the sluices and ponds"† where they were preserved, and the regret with which the Israelites remembered the fish they ate so "freely" in Egypt.‡

The chase of the hippopotamus§, was a favourite amusement of the sportsman, in those parts of the upper country where it was found. It was probably always rare in Lower Egypt||, though Pliny¶ says

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[*] Isaiah, xix. 8.

[†] Ibid. xix. 10.

[‡] Exod. xi. 5. "We remember the fish which we did eat in Egypt freely."

[§] In Arabia it has the same name, Fa as el bahr, "river horse" (mare); and in the language of Ethiopia, Yasimt.

[||] It is not met with in Upper Egypt, or, indeed, on this side the second cataract, at the present day.

[¶] Pliny, xxviii. 8.

it abounded in the Saïte nome: but in Upper Ethiopia this amphibious animal was common in the Nile, as at the present day. Though not so hostile to man as the voracious crocodile, it was looked upon as an enemy, which they willingly destroyed, since the ravages it committed at night in the fields occasioned heavy losses to the farmer*; and an additional inducement to kill it was the value attached to its hide, of which they made shields, whips†, javelins‡, and helmets.§ To the two former purposes it is still applied; and as Pliny observes, it retains its hardness perfectly, if preserved from moisture.

The whips are known by the name of corbág (corbaj), and are in very general use in Egypt and Ethiopia, for riding the dromedary, or for chastising the delinquent peasants; and it is probable that it was also applied to the latter purpose by the ancient Egyptians, since we find an attendant following the steward of an estate, with this implement of punishment in his hand.‖

The mode of attacking and securing the hippopotamus appears, from the sculptures of Thebes, to have been very similar to that now adopted about Sennar; where, like the ancient Egyptians,

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* Pliny and Diodorus are correct in saying "it feeds on the cornfields:" but the modern hippopotamus has not retained the dexterity or the cunning of his ancestors, in walking backwards to deceive his pursuers; mentioned by Plin. viii. 25.: —

"Ætas parentum, pejor avis, tulit
(*Hos*) nequiores, mox daturos
Progeniem vitiosiorem."
Hor. iii. Od. vi. 38.

† Plin. viii. 25. "Tergoris ad scuta galeasque impenetrabilis."

‡ Herod. ii. 71.

§ *Vide* Diod. i. 35.

‖ Wood-cut, No. 346.

No. 346. Attendant carrying a whip, or *corbág*. *Thebes.*

they prefer chasing it in the river, to an open attack on shore: and the modern Ethiopians are contented to frighten it from the corn-fields by the sound of drums, and other noisy instruments.

I have already had occasion * to explain the method of taking this animal: it was entangled by a running noose, at the extremity of a long line wound upon a reel, at the same time that it was struck by the spear of the chasseur. "This weapon consisted of a broad flat blade, furnished with a deep tooth or barb at the side, having a strong rope of considerable length attached to its upper end, and running over the notched summit of a wooden shaft, which was inserted into the head or blade, like a common javelin. It was thrown in the same manner, but on striking, the shaft fell, and the iron head alone remained in the body of the animal, which, on receiving a wound, plunged into deep water, the rope having been immediately let out. When fatigued by exertion, the hippopotamus was dragged to the boat, from which it again plunged, and the

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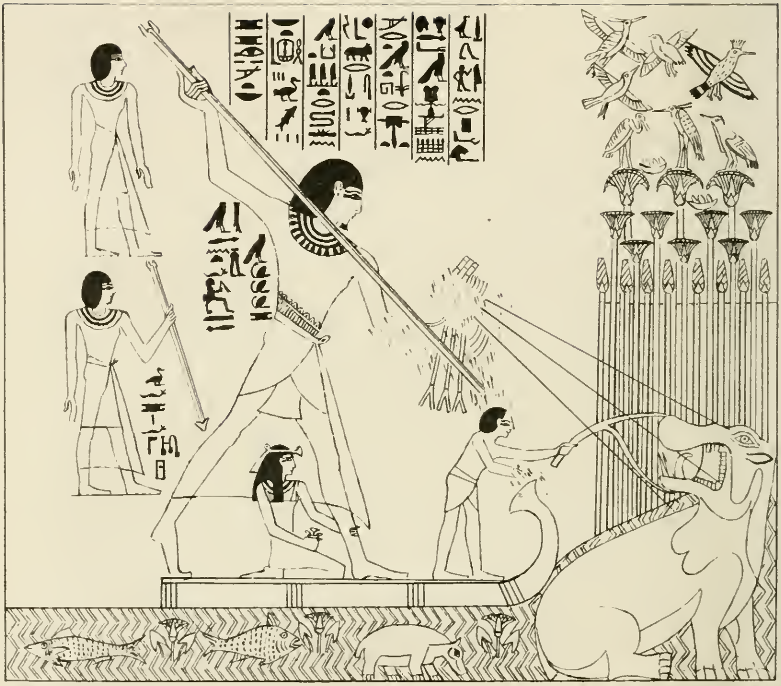
* Egypt and Thebes, p. 226.

Plate XV.



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CHASE of the HIPPOPOTAMUS.

The Chasseur is accompanied by one of his children, an attendant throws a noose over the wounded animal.

same was repeated till it became perfectly exhausted; frequently receiving additional wounds, and being entangled by other nooses, which, the attendants held in readiness, as it was brought within their reach."

Several representations of this subject have been found at Thebes, but the destructive thoughtlessness of the peasants, or the appropriating inclinations of travellers have, unfortunately, destroyed them, and few vestiges now remain beyond the figure of the man, his spear, and a few minor details. I should, therefore, have been unable to introduce a copy of this interesting subject, had not the kindness of Mr. Humphreys, who was fortunate enough to obtain a sketch of one of them, furnished me with it for the accompanying plate.*

The chasseur is here in the act of throwing the spear at the hippopotamus, which he has already wounded with three other blades, indicated by the ropes he holds in his left hand; and having pulled the animal towards the surface of the water, an attendant endeavours to throw a noose over its head, as he strikes it for the fourth time. Behind him is his son, holding a fresh spear in readiness: and in order that there should be no question about the ropes belonging to the blades, the fourth is seen to extend from his hand to the shaft of the spear he is throwing. The upupa, heron, and other birds are frightened from the rushes as the boat approaches; and the fish, with a young hippopotamus, seen at the bottom of the water are intended to show the communication of the fenny lake with the Nile.

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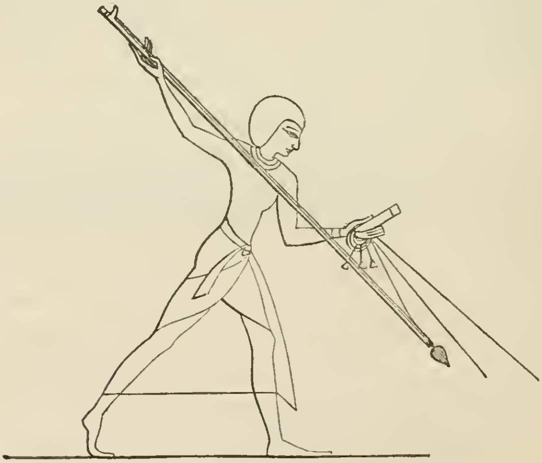
* Plate 15.

The mode of attacking the hippopotamus is thus described by Diodorus*:—" It is chased," says the historian, " by many persons, each armed with iron javelins. As soon as it makes its appearance at the surface of the water, they surround it with boats, and closing in on all sides they wound it with blades, furnished with iron barbs, and having hempen ropes fastened to them, in order that, when wounded, it may be let out, until its strength fails it from loss of blood."

The spear they used on these occasions, was evidently of a different construction from that intended for ordinary purposes, and was furnished, as Diodorus observes, with a rope for letting out the wounded animal, in the same manner as practised by the modern Ethiopians: there was sometimes



No. 347. Spear used in the chase of the hippopotamus. *Thebes.*

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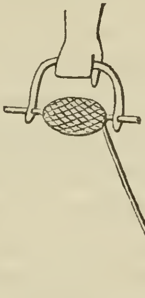
* Diod. i. 35.

another line fastened to the shaft, and passing over a notch at its upper end; which was probably intended to give the weapon a greater impetus, as well as to retain the shaft when it left the blade. The rope attached to the blade was wound upon a reel, generally carried by some of the attendants. It was of very simple construction, consisting of a half ring of metal, by which it was held, and a bar turning in it, on which the line or string was wound.



No. 348. A reel held by an attendant. *Beni Hassan.*

Besides the fish cured, or sent to market for the table, a very great quantity was set apart expressly for feeding the sacred animals and birds, — as the cats, crocodiles, ibises, and others; and it is probable that some of the large reservoirs, attached to the temples, were used as well for preserves or *piscinæ*, where the fish were kept, as to afford a supply of water for the necessary ablutions of the devout, and for various purposes connected with religion.

With regard to the number of fish in the river of Egypt, and the many species said to have been known there, it may be conjectured that some formerly common to the lower parts of the Nile are no longer met with to the north of the first and second cataracts: or varieties of the same species may have been enumerated in the twenty-two mentioned by Diodorus; and we even find that the Ethiopians sometimes brought fish, perhaps of a rare kind unknown in Egypt, as part of their tribute to the Egyptians.

That some animals, both aquatic and terrestrial, as well as several botanical productions, once common in Egypt, are now confined to the latitudes of Ethiopia, is well known; the crocodile, formerly an inhabitant of Lower Egypt and the Delta*, now limits the extent of its visits northward, to the districts about Manfaloot; and the hippopotamus is no longer seen in Lower Ethiopia. And if one was known, some years ago, to wander downwards into Nubia, below the second cataract, and another even as far as Damietta, these were accidental occurrences, which occasioned as much astonishment to the people who witnessed their unexpected visit, as to the bewildered animals themselves.

As usual on such occasions, their unintentional intrusion, where they could not be objects of terror, was punished with a readiness, which the same persons would not have displayed in places where they are really obnoxious; and every Turk, or peasant, who could procure a weapon, was fired with the proud desire of destroying the intruder, and showed the same *chivalrous* feeling, usually called forth against an imprudent porpoise, who has ventured to pass the bridges of the English capital.

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* Seneca, Nat. *Quæst.* iv. 2., says, "at the Heracleotic mouth of the Nile, which is the largest, a battle occurred between the dolphins of the sea and the crocodiles of the river, the former being victorious!"

But the hippopotamus once lived in Lower Egypt, and the city of Papremis, in the Delta, worshipped it as a sacred animal, worthy of the Egyptian Mars.

Neither the hippopotamus nor the crocodile appear to have been eaten by the ancient Egyptians. Pliny indeed mentions the medicinal properties of both of them*; and Plutarch affirms† that the people of Apollinopolis used to eat the crocodile; this, however, was not a general custom, but merely upon a certain occasion connected with religious superstition, and intended to show their abhorrence of Typhon the evil genius, of whom it was an emblem. "They have likewise," he continues, "a solemn hunt of this animal upon a particular day, set apart for the purpose, at which time they kill as many of them as they can, and afterwards throw their dead bodies before the temple of their god, assigning this reason for their practice, that it was in the shape of a crocodile Typhon eluded the pursuit of Orus."

This is one of many instances of the different feelings with which the sacred animals were regarded in various parts of Egypt: and as Herodotus‡ observes, "some of the Egyptians consider the crocodile sacred, while others make war upon it; and those who live about Thebes and the Lake Mœris (in the Arsinoïte nome) hold it in great veneration."

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* Plin. xxviii. 8.

† Plut. de Isid. s. 50.

‡ Herod. ii. 69.

In some places it was treated with the most marked respect, and kept at a considerable expense; it was fed and attended with the most scrupulous care; geese, fish, and various meats were dressed purposely for it; they ornamented its head with ear-rings, and its feet with bracelets and necklaces of gold or artificial stones*; it was rendered perfectly tame by kind treatment; and after death the body was embalmed in a most sumptuous manner. This was particularly the case in the Theban, Ombite, and Arsinoïte nomes; and at a place now called Maabdeh, opposite the modern town of Manfaloot, are extensive grottoes, cut far into the limestone mountain, where numerous crocodile mummies have been found, perfectly preserved, and evidently embalmed with great care.

The people of Apollinopolis, Tentyris, Heracleopolis, and other places, on the contrary, held this animal in abhorrence, and lost no opportunity of destroying it; and the Tentyrites were so expert, from long habit, in catching, and even in engaging, this powerful animal in its native element, that they were known to follow it into the Nile, and bring it by force to the shore. Pliny and other ancient authors mention the wonderful feats performed by them not only in their own country, but in the presence of the Roman people: and Strabo† says that on the occasion of some crocodiles being exhibited at Rome, the Tentyrites who had followed them, fully confirmed the truth of the report of their power over those animals; for, having put them into a spacious tank of water, with a shelving bank artificially constructed at one side, the men boldly entered the water, and entangling them in a net, dragged them to the bank, and back again into the water, in the presence of numerous spectators.

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* Herod. ii. 69.

† Strabo, xvii. p. 560., ed. Cas.

Pliny observes, "that though the Tentyrites are small men, they have the greatest presence of mind in their encounters with the crocodile, which is an animal most dangerous to those who fear it, but timid when pursued. They even dare to follow it singly, and swimming after it in the river spring upon its back, and thrust a bar into its open mouth, which, being held at the two extremities, serves as a bit, and enables them to force it to the shore." Pliny even goes so far as to state that, frightening them with the voice alone, they compelled them to render the bodies they had devoured to the (disappointed) embalmers*; but as crocodiles show themselves much greater epicures in their mode of eating, and tear their food to pieces before they swallow it, we may take the liberty of suggesting the probability that, in these cases, the animal *abandoned the body* on their approach: its usual habit being to bring it to the shore, and there to tear it up, the clothes having been stripped off while in the water.

Seneca† accounts for the power possessed by the Tentyrites over the crocodile from their intrepidity, and in accordance with Pliny, and with modern experience, he states it to be "timid before the bold, and most ready to attack those who fear it: the Tentyrites excelling neither in their nature nor constitution, but in their fearless contempt of it; for they follow, and by means of a snare, stop it in its flight; nor are any killed except those who are wanting in presence of mind."

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* Plin. (viii. 25.) "Voce etiam solâ territos, cogunt evomere recentia corpora ad sepulturam", and xxviii 3.

† Seneca, Nat. Quæst. iv. 2.

"The crocodile is in fact," as I have elsewhere remarked*, "a timid animal, flying on the approach of man, and generally speaking, only venturing to attack its prey on a sudden; for which reason we seldom or never hear of persons devoured by it, unless incautiously standing at the bank of the river, where its approach is concealed by the water; and where, by the immense power of its tail, it is enabled to throw down and overcome the strongest man, who, being carried instantaneously to the bottom of the river, has neither the time nor the means to resist.

"Pliny, like other authors†, has been led into a common error, that the sight of the crocodile is defective under water, which a moment's consideration, without the necessity of *personal* experience, should have corrected; for it is at least reasonable to suppose that an animal, living chiefly on fish, should, in order to secure its prey, be gifted with an equal power of sight; and that of fish cannot be considered defective: but Herodotus, the *father* of history, and of these errors, affirms‡ that it is totally 'blind under water.'

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[*] Egypt and Thebes, p. 409.

[†] Aristot. Hist. An. ii. 10. "They see imperfectly in the water."

[‡] Herod. ii. 68.

"Egypt produces two varieties of this animal[*], distinguished by the number and position of the scales on the neck. One has the front row composed of six scales, behind which is a cluster of four large central scales in two lines, with two smaller ones on each side of the uppermost of these lines; the other has in the front row four only, and the disposition of the other eight is thus: four central scales in two lines, with one smaller one on each side of the upper line, and two behind the second and lower line. The first row of the body consists of six scales, the former variety having only four. The other scales of the body are nearly alike in both. They do not exceed eighteen or nineteen feet, though travellers have mentioned some of stupendous size."

Herodotus enters into a detail of the habits of the crocodile, and relates the frequently repeated story of the trochilus[†] entering the animal's mouth, during its sleep on the sand banks of the Nile, and relieving it of the leeches which adhere to its throat. The truth of this assertion is seriously impugned, when we recollect that leeches do not abound in the Nile; and the polite understanding supposed to exist, between the crocodile and the bird, becomes more improbable, when we examine the manner in which the throat of the animal is formed; for having no tongue, nature has given it the means of closing it entirely, except when in the act of swallowing; and during sleep, the throat is constantly shut, though the mouth is open.

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[*] Egypt and Thebes, p. 225. note. Conf. Plin. xxviii. 8.

[†] Herod. ii. 68. Plin. viii. 25.

The hostile intrusion of the ichneumon, related by other writers*, is equally destitute of probability.

That birds living on flies frequently flit about the crocodile, while lying on the sand, we can readily believe; and this circumstance as well as the presence of a small *running* bird (a species of *charadrius*†), which is often seen on the same bank, and which, loudly chirping on the approach of man may be supposed to warn the crocodile of danger, very possibly led to the fable of those visits of the *trochilus*‡, and the friendly services it rendered the sleeping crocodile.

Its eggs, as Herodotus and Pliny observe, are small, considering the size which it afterwards attains, and are deposited by the female in the sand, or in the light loose earth of the river side; and its constant desire to enjoy the fresh air, during the summer, is shown by its lying for a length of time asleep on the sand banks, with its open mouth turned to the prevailing wind.

"They had many different modes of catching it," says Herodotus§; "that most worthy of notice is as follows: — They fasten a piece of pork to a hook, and throw it into the middle of the stream, as a bait; then, standing near the water's edge, they beat a young pig, and the crocodile, being enticed to the spot by its cries, finds the bait on its way, and swallowing it is caught by the hook. They

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[*] Plin. viii. 25.

[†] Called *sicsac* in Arabic

[‡] The name Trochilus signifies running.

[§] Herod. ii. 70.

then pull it ashore, and the first step is to cover its eyes with mud, and thus being deprived of sight it is unable to offer an effectual resistance." We also find from the sculptures that they attacked the crocodile with a spear, transfixing it as it passed beneath the boat in shallow water.

The hatred borne by some of the Egyptians against the crocodile frequently gave rise to serious disputes, and the inhabitants of Tentyris, who had killed and eaten the sacred animal of Ombos, were attacked with all the fury of religious feud. On one occasion, after many had been wounded on both sides, and the Tentyrites were worsted and compelled to fly, the Ombites secured a prisoner of the opposing party, and if we may believe Juvenal*, satiated their revenge by eating his body. The statement, however, is questionable, nor is it probable even in that depraved age, when Egypt had passed under the dominion of the Romans, that such a scene actually occurred; and great licence is always allowed to poets, and still more is taken by the severity of satire.

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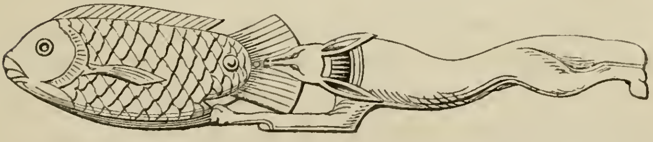
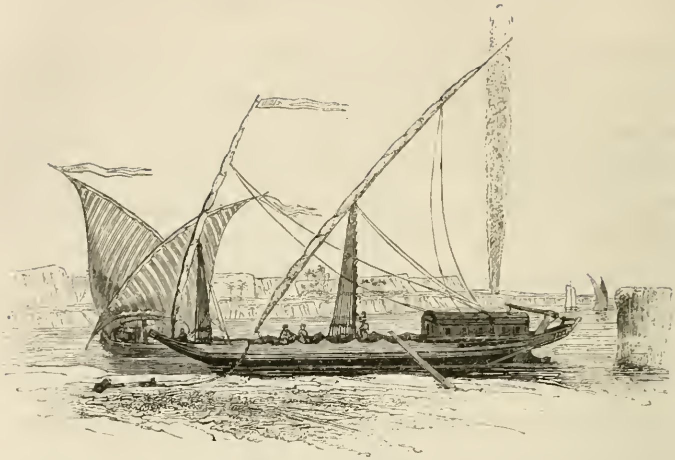
* Juv. Sat. xv. 33. 80.



Box in the form of a fish with turning lid, and handle in the shape of a fox.
Mr. Salt's Collection.



Vignette H. Modern Boats of the Nile. On the opposite bank is a whirlwind of sand.

CHAP. IX.

Arts and Manufactures. — Glass. — Linen. — Dyeing. — Rope-making. — The Papyrus. — Leather-cutters. — Potters. — Cabinet-makers and Carpenters. — Makers of Chariots and Coffins. — Coopers. — Boats and War Galleys. — Tin and other Metals. — Gold Mines. — Gold Working and Gilding.

Of the progress of the ancient Egyptians in many useful branches of art, we have unquestionable proofs in the monuments that remain, and from the evidence of ancient writers. The sculptures inform us that many inventions were known to them at the early periods when most other nations were still in their infancy, which, though generally ascribed to a much later epoch, are, from the facility we now have of fixing the chronology of Egyptian monuments, ascertained to be coeval with the Exodus, or the bondage of the Israelites.

The scientific skill they possessed in architecture, is always a matter of surprise to the traveller who beholds the stupendous monuments of Egypt; whose solid masonry would have defied the ravages of time, and have remained unimpaired to the present day, had not the destructive hand of man been employed against them. The invasion of Cambyses, and the subsequent wars with the Persians; the three years' siege of Thebes, by Ptolemy Lathyrus, which laid several of her buildings in ruins, and so completely reduced that ancient capital, that it was no longer worthy to be considered an Egyptian city; the inveteracy of the Christians against their Pagan predecessors, and the abhorrence of the Moslems for the monuments of the idolatrous infidels; and, lastly, the position of the temples, which presented themselves to the mason as a convenient quarry, supplying, at little labour and expense, abundance of stones for the erection of new edifices, were the baneful causes of the downfal of the Egyptian monuments; but, though great portions of the finest buildings were destroyed, sufficient remains to attest their former grandeur, and to proclaim the wonderful skill and mechanical knowledge of their founders.

At the period of the Persian invasion, Egypt was looked upon as the great school of science, and the repository of all kinds of learning; but the arts had fallen from the degree of excellence to which they attained, under the Augustan age of the 18th dynasty, and though luxury and private wealth increased, taste in sculpture and architecture had long since been on the decline, and minute and highly finished details were substituted for the simple and dignified forms of an earlier period. The arts, however, continued to flourish under the succeeding dynasties, and in the reigns of Psamaticus and Amasis, the encouragement given to architecture, sculpture, and painting, seemed to promise an improvement, if not the revival, of taste, and arrested for a time their downfal: but an unexpected event was destined to bring about their sudden decadence, and the Persian conquest dealt a blow, from which they vainly strove to recover in the succeeding reigns of the Macedonian dynasty; for not only were the finest monuments destroyed or mutilated, statues*, works of art, and all the wealth † of the country carried off to Persia, but the artists themselves were compelled to leave their homes to follow the conquerors to their capital, and to commemorate the victories obtained over Egypt, by the authors of their own captivity and misfortunes. Thus deprived of the finest models, humbled by the lengthened occupation of the country, and losing the only persons capable of directing taste, or encouraging art, Egypt, already beginning to sink, vainly endeavoured to struggle with the overwhelming current of events; and while Persia was benefited, Egyptian art received its death blow from the invasion of Cambyses.

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* Ptolemy Euergetes is said to have brought back 2500 statues, when he invaded the Persian dominions, which had been taken from Egypt by Cambyses.

† Conf. Diodor. i. 46. "The silver and gold, the abundance of ivory and precious stones, carried away by the Persians," and i. 49.

The Egyptians had long been renowned for mathematical science; but it was not till the power and wealth of the country were at their zenith, that full scope was given for its display in the grand style of public monuments; a fact, sufficiently indicated by their increase of scale and vastness of size at that period; the buildings of olden time being generally of much smaller dimensions than those of the advanced age of the 18th dynasty. I particularly allude to the temples and to the colossal statues erected at the latter epoch, which far exceed in their scale, and the size of the blocks themselves, the ordinary monuments of an earlier era, as may be observed in the increased proportions of the grand hall of Karnak, added by Remeses the Great, and the dimensions of the sitting colossi of Amunoph, in the plain of Thebes; or that of Remeses, at the Memnonium, which weighed about 886 tons, and was brought over land from the quarries at the cataracts of Syene, a distance of more than 120 miles.*

Many obelisks, each of a single block of granite, had already been hewn, and transported from the same quarries, as early at least as the reign of Osirtasen I., whom I suppose to have been the contemporary of Joseph; and the same mechanical skill had already existed even before that period, as is shown from the construction of those wonderful monuments the pyramids, near Memphis, which in the size of the blocks, and their style of building, evince a degree of architectural knowledge, perhaps inferior to none possessed at a subsequent epoch. But it was not generally called forth in early times; they were then contented with monuments of an inferior scale, and their ordinary buildings were not of the same gigantic dimensions. A grand work was then seldom undertaken without an adequate motive, and the knowledge they possessed was reserved for particular and extraordinary occasions: but when riches and the love of show increased, they extended the size of their temples, and constant practice having made the means familiar to them, artisans and engineers vied with each other in hewing and transporting colossal statues, monoliths, and other ponderous monuments, which served for ornament, and the display of their mechanical knowledge.

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* I shall have occasion to notice this hereafter.

It was not in this branch of science alone that the Egyptians excelled: the wonderful skill they evinced in sculpturing or engraving hard stones is still more surprising; and we wonder at the means employed for cutting hieroglyphics, frequently to the depth of more than two inches, on basalt, on syenite, and other stones of the hardest quality. Nor were they deficient in taste, — a taste too not acquired by imitating approved models, but claiming for itself the praise of originality, and universally allowed to have been the parent of much that was afterwards perfected, with such wonderful success, by the most highly gifted of nations, the ancient Greeks: and no one can look upon the elegant forms of many of the Egyptian vases, the ornamental designs of their architecture, or the furniture of their rooms, without conceding to them due praise on this point, and admitting, that however whimsical some of the figures may be in sacred subjects, they often showed considerable taste, where the regulations of the priesthood and religious scruples ceased to interfere.

In their temples they were obliged to conform to rules established in the early infancy of art, which custom and prejudice had rendered sacred: the ancient style was always looked upon with the highest veneration, and it is probable that from the same feeling of respect, the formulas and diction of their books of law or religion continued the same as in early times; a custom prevalent among many people, whatever improvements language undergoes; for neither would the Turkish Moslem dare to translate the Arabic Qorán, nor the Cairene to alter it to his own dialect; and we might ourselves object to a Bible written in the style of Robertson or Hume.

Plato and Synesius both mention the stern regulations which forbade their artists to introduce innovations in religious subjects; and the more effectually to prevent this, "the profession of artist was not allowed to be exercised by common or illiterate persons, lest they should attempt any thing contrary to the laws established, regarding the figures of the deities."

In their household furniture, and the ornamental objects used in their dwelling houses, they were not restricted by any established rules; here, as I have observed, much taste was displayed, and their vases frequently bear so strong a resemblance to those of Greece, that we might feel disposed to consider them borrowed from Greek models, did not their known antiquity forbid such a conclusion; and many have mistaken the ornamental devices, attached to them, and to other fancy works of Egyptian art, for the productions of Greek sculptors. Now, that we are acquainted with the dates of the Egyptian monuments, the square border and scrolls, so common on Athenian, Sicilian, Etruscan, and Græco-Italian vases, are shown to be, from the most remote time, among the ordinary devices on cups, and the ceilings of tombs, at Thebes and other places; and the graceful curve * of the Egyptian cornice, which, not confined to architecture, is repeated on vases, and numerous articles of furniture, was evidently adopted, for the same ornamental purpose, by the Greeks.

GLASS, PORCELAIN, AND FALSE STONES.

One of the most remarkable inventions of a remote era, and one with which the Egyptians appear to have been acquainted, at least as early as the reign of the first Osirtasen, upwards of 3500 years ago, is that of glass-blowing. The process is represented in the paintings of Beni Hassan, execu-

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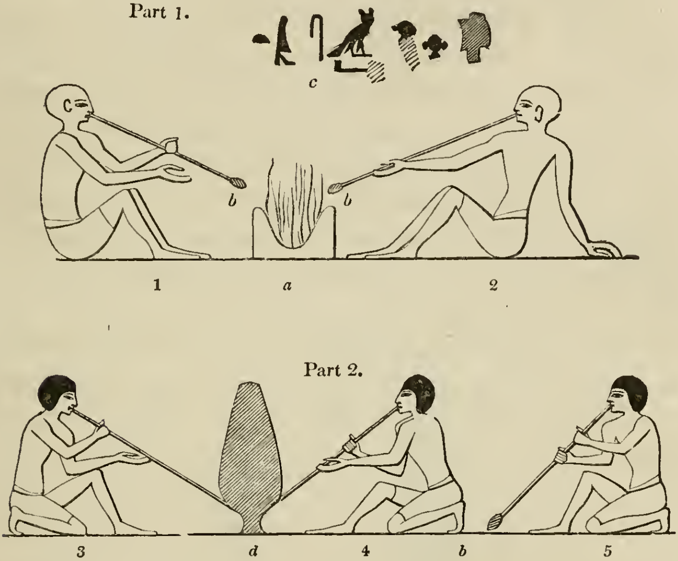
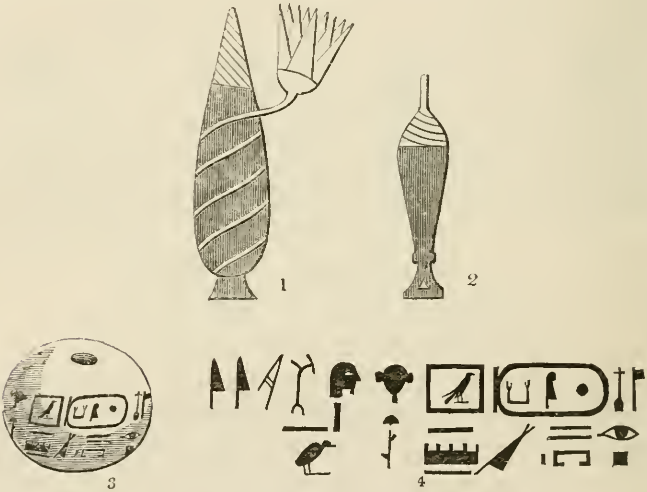
* *Vide* vases, woodcut, No. 244, and doorways, woodcuts, Nos. 101, 102, and 104.

ted during the reign of that monarch, and his immediate successors; and the same is again repeated, in other parts of Egypt, in tombs of various epochs.



No. 349. Part 1. Glass-blowers. *Beni Hassan.*
2. The same. *Thebes.*
The glass at the end of the blowpipe *b b*, is coloured green.
a is the fire. *d* a glass bottle.

The form of the bottle and the use of the blowpipe are unequivocally indicated in those subjects; and the green hue of the fused material, taken from the fire at the point of the pipe, cannot fail to show the intention of the artist. But if the sceptic should feel disposed to withhold his belief on the authority of a painted representation, and deny that the use of glass could be proved on such evidence, it may be well to remind him that images of glazed pottery were common at the same period, that the vitrified substance with which they are covered is of the same quality as glass, and that therefore the mode of fusing, and the proper proportions of the ingredients for making glass, were already known to them; and we can positively state, that 200 years after, or, about 1500 B.C., they made ornaments of glass; a bead bearing a king's name who lived at that period, having been found at Thebes, by my friend Captain Henvey, R. N., the specific gravity of which, 25° 23′, is precisely the same as of crown glass, now manufactured in England.



No. 349. *a*.

Figs. 1. 2. Glass bottles represented in the sculptures of Thebes.
3. Captain Henvey's glass bead. About the real size.
4. The hieroglyphics on the bead, containing the name of a monarch who lived 1500. B. C.

Many glass bottles and objects of various forms have been met with in the tombs of Upper and Lower

Egypt, some unquestionably of very remote antiquity, though not readily ascribed to any fixed epoch, owing to the absence of royal names, indicative of their date; and glass vases, if we may trust to the representations in the Theban paintings, are frequently shown to have been used for holding wine, at least as early as the Exodus, 1490 years before our era.

Till within a few years, prejudice forbade the belief that the ancients were acquainted with the manufacture of glass, and many persons could not be persuaded that the Romans used it, though represented in the paintings of Pompeii with the most unquestionable truth, and a pane of glass and numerous fragments of broken bottles had been discovered in that excavated city. The fact, however, became established, and these doubts were silenced; still it was questioned whether the invention dated before the destruction of that city; the glass was much condemned as of inferior quality; and the authority of Pliny*, previously disbelieved, was now welcomed as an old friend, and called forth to prove that glass was a late discovery of some Phœnician mariners, who having lighted a fire on the sea shore, and supported their cooking utensils on blocks of nitre, were taught by the union of the fused substances the secret of this useful invention. The Roman naturalist had fixed no time for this event, and if he spoke of improvements in the art, introduced in the reign of Tiberius, it was presumed that, though a vitrified substance was known, its qualities were not properly understood, and that its discovery only dated about the Augustan age. They even objected that under the first emperors, windows were made of a transparent stone, brought from Spain and other countries, called Lapis specularis; and they hence inferred the imperfect knowledge of glass.

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* Plin. xxxvi. c. 26.

This stone is now well known under the name of talc; it was only used in the houses of the rich, in litters, or as an ornament to the best apartments: other persons being content with linen, horn, or paper.

Such were the feeble arguments brought forward to disprove the use of glass for vases and for ornamental purposes, among the Romans; but with much less reason did they apply to its invention in other countries: and though the Egyptians never knew the necessity, or rather the annoyance, of glass windows, under a burning sun, they were well acquainted with vases of that material; and the workmen of Thebes and Memphis, and subsequently Alexandria, were famed for the excellent qualities of glass ware they produced, with which Rome continued to be supplied, long after Egypt became a province of the empire. Strabo was informed by a glassmaker of Alexandria* that a peculiar earth was found in Egypt, without which it was impossible to manufacture certain kinds of glass of a brilliant and valuable quality; and some vases, presented by an Egyptian priest to the emperor Hadrian*, were considered so curious and valuable, that they were only used on grand occasions.

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* Strabo, lib. xvii.

Such too was the skill of the Egyptians in the manufacture of glass, and in the mode of staining it of various hues, that they counterfeited with success the amethyst and other precious stones, and even arrived at an excellence in the art which their successors have been unable to retain, and which our European workmen, in spite of their improvements in other branches of this manufacture, are still unable to imitate; for not only do the colours of some Egyptian opaque glass offer the most varied devices on the exterior, distributed with the regularity of a studied design, but the same hue and the same device pass in right lines directly through the substance; so that in whatever part it is broken, or wherever a section may chance to be made of it, the same appearance, the same colours, and the same device present themselves, without being found ever to deviate from the direction of a straight line, from the external surface to the interior.

This quality of glass, of which I have seen several specimens, has been already noticed by the learned Winkelmann, who is decidedly of opinion that "the ancients carried the art of glass making to a higher degree of perfection than ourselves, though it may appear a paradox to those who have not seen their works in this material."* He describes two pieces of glass, found at Rome, a few years before he wrote, which were of the quality above mentioned.† "One of them," he says, "though not quite an inch in length, and a third of an inch in breadth, exhibits on a dark and variegated ground, a bird resembling a duck, in very bright and varied colours, rather in the manner of a Chinese painting than a copy of nature. The outlines are bold and decided, the colours beautiful and pure, and the effect very pleasing; in consequence of the artist having alternately introduced an opaque and a transparent glass. The most delicate pencil of a miniature painter could not have traced with greater sharpness the circle of the eyeball, or the plumage of the neck and wings; at which part this specimen has been broken. But the most surprising thing is, that the reverse exhibits the same bird, in which it is impossible to discover any difference in the smallest details; whence it may be concluded that the figure of the bird continues through its entire thickness. The picture has a granular appearance on both sides, and seems to have been formed of single pieces, like mosaic work, united with so much skill, that the most powerful magnifying glass is unable to discover their junction.

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* Vopiscus in Vita Saturnini, c. 8.

"From the condition of this fragment, it was at first difficult to form any idea of the process employed in its manufacture: and we should have remained entirely ignorant of it, had not the fracture shown that filaments of the same colours, as on the surface of the glass, and throughout its whole diameter, passed from one side to the other; whence it has been concluded that the picture was composed of different cylinders of coloured glass, which being subjected to a proper degree of heat, united by (partial) fusion. I cannot suppose they would have taken so much trouble, and have been contented to make a picture only the sixth of an inch thick, while, by employing longer filaments, they might have produced one many inches in thickness, without occupying any additional time in the process; it is therefore probable this was cut from a larger or thicker piece, and the number of the pictures taken from the same depended on the length of the filaments, and the consequent thickness of the original mass.

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* Winkelmann, Orig. de l'Art., lib. i. 2. 19.
† Winkelmann, Ibid.

" The other specimen, also broken, and about the size of the preceding one, is made in the same manner. It exhibits ornaments of a green, yellow, and white colour, on a blue ground, which consist in volutes, strings of beads, and flowers, ending in pyramidical points. All the details are perfectly distinct and unconfused, and yet so very minute, that the keenest eye is unable to follow the delicate lines in which the volutes terminate; the ornaments, however, are all continued, without interruption, through the entire thickness of the piece."

Sometimes, when the specimens were very thin, they applied and cemented them to a small slab of stone of their own size*, which served as a support at the back; and by this means they were enabled to cut them much thinner, and consequently to increase their number.

Two of the most curious specimens I have seen, of this kind of glass, have been brought to England. One is in the possession of my friend, Capt. Henvey, R. N., to whose kindness I am indebted for the copy I have given of it, and of the bead before mentioned. The other was found in Egypt by Dr. Hogg.

The quality and the distribution of the colours in Captain Henvey's specimen are strikingly beautiful: the total size is about $1\frac{2}{10}$ inch square; and the ground is of an amethyst hue. In the centre is a device consisting of a yellow circle, surrounded by light blue with a bright red border, and on the four sides shoot forth light blue rays edged with white. Around this, which is isolated, runs a square ornament of bright yellow, divided into distinct parts, formed by openings in each of the sides, and at the four corners a beautiful device projects, like a leaf, formed of a succession of minute lines, green, red, and white, the two last encircling the green nucleus, which meet in a common point towards the base, and terminate in almost imperceptible tenuity. The delicacy of some of the lines is truly surprising, and not less the accuracy with which the patterns are executed; and the brilliancy of the colours is as remarkable as the harmony maintained in their disposition: an art then much more studiously attended to, and far better understood than at the present day.

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* Mr. Rogers has a specimen applied in this manner.

The secret of making these glass ornaments is more readily explained from this specimen than any I have met with. It consists of separate squares, whose original division is readily discovered in a bright light, as well as the manner of adjusting the different parts, and of uniting them in one mass; and here and there we find that the heat applied to cement the squares has caused the colours to run between them, in consequence of partial fusion from too strong a fire. This fact, and the disposition of the separate squares, will be better understood from a reference to the plate*, from which too some idea may be obtained of the fineness of the lines composing the devices.

Not only were these various parts made at different times, and afterwards united by heat, rendered effective on their surfaces, by means of a flux applied to them, but each coloured line was at first separate, and, when adjusted in its proper place, was connected with those around it by the same process: and these, as Winkelmann very properly suggests, were cylinders, or laminæ, according to the pattern proposed, which passed in direct lines through the substance, or ground, in which they were imbedded.

Paw, Goguet, and other antiquaries had long ago been convinced that glass was known to the

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* *Vide*, plate 17. — Frontispiece.

Egyptians, as well as the Phœnicians, at a very remote period, and the immense emeralds mentioned by ancient authors were considered glass imitations of those precious stones; a conjecture rendered still more plausible by the experience of modern times, which shows that the most noted jewels of Christian churches are frequently formed of the same materials. Such were the colossal statue of Serapis*, in the Egyptian labyrinth, nine cubits, or thirteen feet and a half, in height; an emerald presented by the king of Babylon to an Egyptian Pharaoh†, which was four cubits, or six feet, long, and three cubits broad; and an obelisk‡ in the temple of Jupiter, which was forty cubits, or sixty feet, in height, and four cubits broad, composed of four emeralds.§

The opinion of those writers, respecting the early invention of glass is now fully confirmed; and whether the first idea originated with the Phœnicians, or their neighbours the Egyptians, we have satisfactory evidence of its use 3300, or perhaps 3500 years ago.

Of the different purposes to which glass was applied by the ancients, Winkelmann gives a further account in the same chapter, where he pronounces his opinion that, " generally speaking, it was employed more frequently in ancient than in modern times;" and cites, as another proof of their great skill in its manufacture, the vase preserved in the Palazzo Barberini, at Rome, which, from the manner in which the layers of colour were united "had been mistaken for a real sardonyx." It is the same that is now in the British Museum, and known by the name of the Portland vase.[*]

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* Plin. lib. xxxvii. 5. on the authority of Apion, surnamed Plistonices.

† Plin. loc. cit. on the authority of Theophrastus.

‡ Plin. loc. cit. See also Theophrastus on stones, s. 44.

§ To have made them of glass required extraordinary skill.

That the Egyptians, at the early period of the 18th dynasty, were well acquainted not only with the manufacture of common glass, for beads and bottles of ordinary quality, but with the art of staining it of divers colours, is sufficiently proved by the fragments found in the tombs of Thebes; and so skilful were they in this complicated process, that they imitated the most fanciful devices, and succeeded in counterfeiting the rich hues, and brilliancy of precious stones.[†] The green emerald, the purple amethyst, and other expensive gems were successfully imitated; a necklace of false stones could be purchased at a Theban jeweller's, to please the wearer, or deceive a stranger, by the appearance of reality; and the feelings of envy might be partially allayed, and the love of show be gratified by these specious substitutes for real jewels.

Pliny states[‡] that the emerald was more easily counterfeited than any other gem, and considers the art of imitating precious stones a far more lucrative piece of deceit than any devised by the ingenuity of man; Egypt was, as usual, the country most noted for its skill in this manufacture [*], and Strabo [†] says, "that an earth found there was the only kind which would answer for certain rich and variegated compositions." The emeralds mentioned by Apion and Theophrastus, which, as before observed, are supposed to have been of glass, might also be cited to show that the art was known in a Pharaonic age, if we had not abundant and far more satisfactory proofs from specimens found in the ruins of Thebes: and we can readily believe the assertion of Pliny, that in his time they succeeded so completely in the imitation as to render it "difficult to distinguish false from real stones." [‡]

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[*] Some imitations of it were made by Wedgewood.

[†] Seneca says that Democritus first showed the method of polishing ivory, and of imitating precious stones (Epist. 90.); but this was long after the art was common in Egypt. *Vide* Plin. (xxxvi. 26.), "Fit et album et murrhinum, aut hyacinthos sapphirosque imitatum (vitrum);" and Herodot. ii. 69., who calls them *λιθινα χυτα*, or melted composition of stone.

[‡] Non est smaragdo alia imitabilior gemma mendacio vitri;" and "ex crystallo tingentur smaragdi, ... neque est ulla fraus vitæ lucrosior," lib. xxvii. c. 12.

Many, in the form of beads, have been met with in different parts of Egypt, particularly at Thebes; and so far did the Egyptians carry this spirit of imitation, that even small figures, scarabæi, and objects made of ordinary porcelain, were counterfeited, being composed of still cheaper materials. A figure, which was entirely of earthenware, with a glazed exterior, underwent a somewhat more complicated process than when cut out of stone, and simply covered with a vitrified coating; this last could therefore be sold at a low price: it offered all the brilliancy of the former, and its weight alone betrayed its inferiority; by which means, whatever was novel, or pleasing from its external appearance, was placed within reach of all classes; or at least the possessor had the satisfaction of appearing to partake in each fashionable novelty.

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[*] *Vide* the memoir of M. Boudet, "Sur l'Art de la Verrerie, né en Egypte," in that valuable work the Description de l'Egypte, vol. ix. p. 213. I cannot agree with M. B. respecting the trees and the water at the Natron Lakes, p. 239. note c.

[†] Strabo, lib. xvi. p. 521. ed. Cas.

[‡] Plin. xxxvii. 12.

Such inventions, and successful endeavours to imitate costly ornaments by humbler materials, not only show the progress of art among the Egyptians, but strongly argue the great advancement they had made in the customs of civilised life; since it is certain, that until society has arrived at a high degree of luxury and refinement, artificial wants of this nature are not created, and the lower classes do not yet feel the desire of imitating their wealthier superiors, in the adoption of objects dependent on taste or accidental caprice.

Glass bugles and beads were much used by the Egyptians for necklaces, and for a sort of network, with which they covered the wrappers and cartonage of mummies, arranged so as to form, by their varied hues, numerous devices and figures, in the manner of our bead purses; and the ladies sometimes amused themselves by stringing them for ornamental purposes, as at the present day.

The principal use to which glass was applied by the Egyptians, (besides the beads and fancy work already noticed,) was for the manufacture of bottles, vases, and other utensils *; wine was fre-

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* The lamps mentioned by Herodotus (ii. 62.), at the festival of lamps at Saïs, were probably glass. *Vide infrà*, p. 112.

quently brought to table in a bottle, or handed to a guest in a cup * of this material, and a body was sometimes buried in a glass coffin. † Occasionally a granite sarcophagus was covered with a coating of vitrified matter, usually of a deep green colour, which displayed, by its transparency, the sculptures or hieroglyphic legends engraved upon the stone ; a process well understood by the Egyptians, and the same they employed in many of the blue figures of pottery and stone, commonly found in their tombs ; the stone, in one case, being covered with a composition capable of vitrifying, and then exposed to a certain degree of heat, until properly melted and diffused over the surface, and, in the other, dipped into a mixture, which was vitrified in the same manner.

Like the Romans, they used glass for mosaic work, and pieces of various colours were employed in fancy ornaments, in the figures of deities, in sacred emblems, and in the different objects for which inlaid work was particularly adapted, the quality there used being generally of an opaque kind. In some of these vitrified compositions, the colours have a brilliancy which is truly surprising; the blues which are given by copper are vivid and beautifully clear; and one of the reds, which is probably derived from minium, has all the intenseness of rosso antico with the brightness of the

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* In Rome the use of glass vases superseded that of gold and silver. Plin. xxxvi. 26. " Usus ad potandum argenti metalli et auri pepulit (vitrum)."

† Alexander the Great was said to have been buried in a glass coffin at Alexandria.

glassy material in which it is found; thus combining the qualities of a rich enamel.

Many of the cups discovered at Thebes, present a tasteful arrangement of varied hues, and evince the great skill of the Egyptians in the manufacture of porcelain; and no one can examine similar specimens without feeling convinced of the great experience they possessed in this branch of art. The manner in which the colours are blended and arranged; the minuteness of the lines, frequently tapering off to an almost imperceptible fineness; and the varied directions of tortuous curves, traversing the substance, but strictly conforming to the pattern designed by the artist, display no ordinary skill, and show that they were perfect masters of the means employed to produce the effect proposed.

The Egyptian porcelain should perhaps be denominated glass-porcelain, as partaking of the quality of the two, and not being altogether unlike the porcelain-glass invented by the celebrated Réaumur; who discovered, during his curious experiments on different qualities of porcelain, the method of converting glass into a substance very similar to chinaware.

The ground of Egyptian porcelain is generally of one homogeneous quality and hue, either blue or green, traversed in every direction by lines or devices of other colours—red, white, yellow, black, light or dark blue, and green, or whatever the artist chose to introduce; and these are not always confined to the surface, but frequently penetrate considerably into the ground, sometimes having passed half, at others entirely through, the fused substance; in which respect they differ from the porcelain of China, where the flowers or patterns are applied to the surface, and perhaps justify the use of the term glass-porcelain, which I have adopted. In some instances, the yellows were put on after the other colours, upon the surface of the vase, which was then again subjected to a proper degree of heat; and after this, the handles, the rim, and the base, were added, and fixed by a repetition of the same process. It was not without considerable risk that these additions were made, and many vases were broken during the operation; to which Martial alludes, in an epigram on the glass cups of the Egyptians.*

That the Egyptians possessed considerable knowledge of chemistry and the use of metallic oxides, is evident from the nature of the colours applied to their glass and porcelain; and they were even acquainted with the influence of acids upon colour, being able, in the process of dyeing or staining cloth, to bring about certain changes in the hues †, by the same process adopted in our own cotton works, as I shall show in describing the manufactures of the Egyptians.

It is evident that the art of cutting glass was known to the Egyptians at the most remote periods, hieroglyphics and various devices being engraved upon vases and beads, made in the time of the 18th dynasty; and some glass, particularly that which bears figures or ornaments in relief, was cast in a mould. Some have supposed that the method of cutting glass was unknown to the ancients, and have limited the period of its invention to the commencement of the seventeenth century of our era, when Gaspar Lehmann, at Prague, first succeeded in it, and obtained a patent from the emperor Rodolph II.; but we may infer from the authority of Pliny, that glass-cutting was known to the ancients, and that the diamond was used for the purpose as at the present day, even if they were ignorant of the art of cutting this stone with its own dust. "Diamonds," says that author *, "are eagerly sought by lapidaries, who set them in iron handles, for they have the power of penetrating any thing, however hard it may be." He also states that emeralds and other hard stones were engraved, though in early times it was "considered wrong to violate gems with any figures or devices †;" and the diamond was found capable of cutting those of the hardest quality, "for all gems," he observes, "may be engraved by the diamond." ‡

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* Martial, Epig. lib. xiv. 115. Calices vitrei: —

> "Adspicis ingenium Nili, quibus addere plura
> Dum cupit, ah, quoties perdidit auctor opus."

† Plin. xxxv. 11.

It is difficult to decide upon the precise method

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* Plin. xxxvii. 4. "Expetuntur (adamantis crustæ) a sculptoribus, ferroque includuntur, nullam non duritiam ex facili cavantes."

† Plin. xxxvii. Procm. and xxxiii. 1. He thinks the stone of Polycrates' ring was a sardonyx. xxxvii. c. 1.

‡ Plin. xxxvii. 13. "Verum omnes (gemmæ) adamante (scalpi possunt)."

adopted by the Egyptians for cutting glass and hard stones; but if nothing remains to show the process they employed, there is sufficient evidence of its effect; and their early intercourse with India may have led them to the knowledge of the diamond, and of its great utility in engraving those materials. It is also probable that emery powder, as I shall hereafter have occasion to observe, and the lapidary's wheel were used in Egypt; and there is little doubt that the Israelites learnt the art of cutting and engraving stones in that country.*

Some glass bottles were enclosed in wicker work†, very nearly resembling what is now called by the Egyptians a *damagán:* they were generally of considerable size, holding from one to two gallons of fluid; and some of a smaller size, from six to nine inches in height, were protected by a covering made of the stalks of the papyrus or *cyperus* rush, like the modern bottles containing Florence oil‡: others again appear to have been partly cased in leather, sewed over them, much in the same manner as some now made for carrying liquids on a journey.§

Among the many bottles found in the tombs of Thebes, none have excited greater curiosity and surprise, than those of Chinese manufacture,

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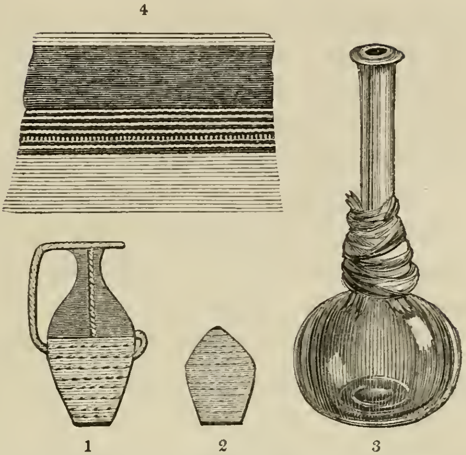
* The stones engraved by the Israelites were the "sardius, topaz, and carbuncle; the emerald, sapphire, and *diamond;* the ligure, agate, and amethyst; the beryl, onyx, and jasper." Exod. xxviii. 17, 18, 19, 20. and xxxix. 6.

† Wood-cut, 350. *fig.* 2.

‡ Wood-cut, 350. *fig.* 3.

§ Wood-cut, 350. *fig.* 1.



No. 350. Fig. 1, has apparently leather sewed over the glass.
2, glass *damagán* enclosed in wicker work.
3, glass bottle covered with papyrus rush, like the Florence oil flasks. *In the possession of S. Rogers, Esq.*
4, a piece of cloth with a border of a blue colour. *In my possession.*

presenting inscriptions in that language. The accidental discovery of a single bottle of this kind would naturally pass unheeded, and if we felt surprised that it should be deposited in an Egyptian sepulchre, conjecture would reasonably suggest that an accidental visiter in later times might have dropped it there, while searching for ancient treasures of a more valuable kind. But this explanation ceases to be admissible, when we find the same have been discovered in various Theban tombs. I myself have seen several, two of which I brought to England*; another is described by the learned Professor Rosellini†, and found by him "in a previously unopened tomb, of uncertain date, which," he refers, "from the style of the sculptures, to a Pharaonic period, not much later than the 18th dynasty;" a fourth is in the museum at Jersey; another was purchased by Lord Prudhoe, at Coptos, and is now in the museum at Alnwick Castle; two others are in the possession of Mrs. Bowen; and another belongs to Mr. W. Hamilton. They are about two inches in height: one side presents a flower, and the other an inscription, containing, according to the valuable authority of Mr. Davis,

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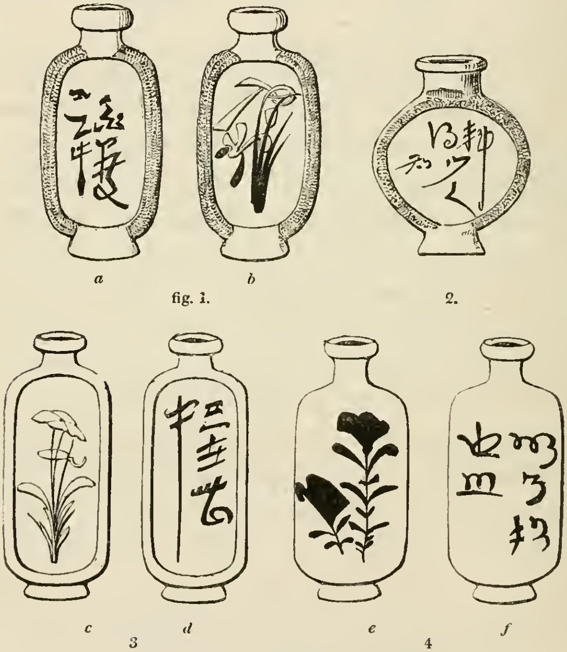
* One is in the British Museum, the other in my possession.

† In his extensive work on the Egyptian monuments, part 2. vol. ii. p. 337.



No. 351. Chinese bottles found in the Egyptian tombs.

Fig. 1, in the Museum of Alnwick Castle.
2, brought by me from Thebes.
3, belonging to Mr. W. Hamilton.
4, in my possession. From Thebes.

(in three out of the eight*,) the following legend —"The flower opens, and lo! another year."

The quality of these bottles is very inferior, and they appear to have been made before the manufacture of porcelain had attained the same degree of perfection in China as in after times; they were probably brought to Egypt, through India, with which country I believe the Egyptians to have traded at a very remote period, and contained some precious ingredient, whose value may be inferred from the size of the vase. It cannot be supposed that the Egyptians, who manufactured porcelain of far better quality, would have sought or imported these as articles of value; we can therefore only suppose that they were prized for their contents: and after they were exhausted, the valueless bottle was applied to the ordinary purpose of holding the *Kohl*, or Collyrium, used by women for staining their eyelids.

It has been questioned, if the Egyptians understood the art of enamelling upon gold or silver, though, even in the absence of further evidence, we might infer it from an expression of Pliny†, who says: "The Egyptians paint their silver vases, representing Anubis upon them, the silver being painted and not engraved." Small gold figures are frequently found with ornamented wings, and bodies, whose feathers, faces, or other coloured parts are composed of a vitrified composition, let into the metal; some again appear to have been really enamelled; and it is probable that the early specimens of *encaustum* were made by tooling the devices to a certain depth on bronze, and pouring a vitrified composition into the hollow space, the metal being properly heated, at the same time; and when fixed, the surface was smoothed down and polished.

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* I am happy to find that Mr. Davis is preparing an account of these interesting curiosities.

† Plin. xxxiii. 9.

Both the encaustic painting in wax, and that which consisted in burning in the colours were evidently known to the ancients, being mentioned by Pliny[*], Ovid[†], Martial[‡], and others; and the latter is supposed to have been on the same principle as our enamelling on gold. Pliny[§] says it was uncertain to whom the invention was due: some ascribed it to Aristides, as that of perfecting the art to Praxiteles; but he supposes "it was known, long before that time, to Polygnotus, Nicanor, and Arcesilaus of Paros."

Bottles of various kinds, glass, porcelain, alabaster, and other materials were frequently exported from Egypt to other countries. The Greeks, the Etruscans, and the Romans received them as articles of luxury, which being remarkable for their beauty were prized as ornaments of the table; and when Egypt became a Roman province, part of the tribute annually paid to the conquerors consisted of glass vases, from the manufactories of Memphis and Alexandria.

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[*] Ibid. xxxv. 11.

[†] Ovid, Fast. lib. viii. 275.
"———————— et picta coloribus ustis
Cœlestum matrem concava puppis habet."

[‡] Mart. Epig. lib. iv. ep. 39.
"Encaustus Phaëthon tabulâ depictus in hâc est;
Quid tibi vis Dipyron qui Phaëthonta facis?"

[§] Plin. xxxv. 11. "Ceris pingere, ac picturam inurere quis primus excogitaverit, non constat."

The intercourse between Egypt and Greece had been constantly kept up after the accession of Psamaticus and Amasis ; and the former, the parent of the arts at that period, supplied the Greeks and some of the Syrian tribes with the manufactures they required.

The Etruscans, a commercial people, appear to have traded with Egypt, about, or a little after the same period, and we repeatedly find small alabaster and porcelain bottles in their tombs, which have all the character of the Egyptian ; and not only does the stone of the former proclaim by its quality the quarries from which it was taken, but the form and style of the workmanship leave no doubt of the bottles themselves being the productions of Egyptian artists.

It is uncertain of what stone the murrhine vases, mentioned by Pliny*, Martial, and other writers, were made ; it was of various colours, beautifully blended, and even iridescent, and was obtained in greater quantity in Carmania than in any country. It was also found in Parthia and other districts of Asia, but unknown in Egypt ; a fact quite consistent with the notion of its being fluor-spar, which is not met with in the valley of the Nile ; and explaining the reason why the Egyptians imitated it with the composition known under the name of false murrhine, said to have been made at Thebes*, and Memphis. The description given by Pliny certainly bears a stronger resemblance to the fluor-spar, than to any other stone, and the only objection to this having been murrhine, arises from our not finding any vases, or fragments, of it; and some may still be disposed to doubt if the stone is known to which the naturalist alludes. But the fluor-spar appears to have the strongest claim; and the porcelain of Egypt, whose various colours are disposed in waving lines, as if to imitate the natural undulations of that crystallised substance†, may perhaps be looked upon with reason as the false murrhine of the ancients.

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* Plin. xxxvii. 2.

It is difficult to say whether the Egyptians employed glass for the purpose of making lamps or lanterns: ancient authors give us no direct information on the subject; and the paintings offer no representation which can be proved to indicate a lamp, a torch, or any other kind of light.‡

Herodotus§ mentions a "fête of burning lamps," which took place at Saïs, and indeed throughout the country, at a certain period of the year, and describes the lamps used on this occasion as "small vases filled with salt and olive oil, on which the wick floated, and burnt during the whole night;" but it does not appear of what materials those vases were made, though we may reasonably suppose them to have been of glass.

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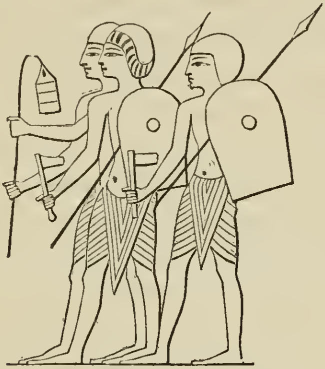
* Arrian, in his Periplus of the Red Sea (p. 3.), mentions "*λιθιας ὑαλης πλειονα γενη, και αλλης μοῤῥινης της γενομενης εν Διοσπολει.*" At Medeenet Haboo are numerous agatised pebbles, which were evidently brought there (the nearest known spot where they are found being Nubia), but at what period is uncertain. Were they not for some purpose connected with art? If so, it is not probable they were brought there by the Christians, though generally found upon the surface of the mounds.

† *Vide* wood-cut, No. 256. *fig.* 2, 257. *fig.* 5, and 411. *fig.* 1, *a.*

‡ In the funeral processions, one person carries what seems to be a candle or torch.

§ Herodot. ii. 62.



No. 352. A guard apparently with a lantern. *Alabastron.*

The sculptures of Alabastron, again, represent a guard of soldiers, one of whom holds before him what resembles, and may be considered, a lantern; but here too there is great uncertainty, and neither of these are sufficient to decide the question.

MANUFACTURE OF LINEN.

The Egyptians, from a most remote era, were celebrated for their manufacture of linen and other cloths, and the produce of their looms was exported to, and eagerly purchased by, foreign nations. The fine linen, and embroidered work, the yarn, and woollen stuffs, of the upper and lower country are frequently mentioned, and were highly esteemed. Solomon purchased many of those commodities, as well as chariots and horses, from Egypt; and Chemmis, the city of Pan, retained * the credit it had acquired in making woollen stuffs, nearly till the period of the Roman conquest.

Woollen garments were chiefly used by the lower orders; sometimes also by the rich, and even by the priests, who were permitted to wear an upper robe in the form of a cloak of this material: but under garments of wool were strictly forbidden them, upon a principle of cleanliness; and as they took so much pains to cleanse and shave the body, they considered it inconsistent to adopt clothes made of the hair of animals. No one was allowed to be buried in a woollen garment, in consequence, as I have already observed †, of its engendering worms, which would injure the body; nor could any priest enter a temple without taking off this part of his dress.

The quantity of linen manufactured and used in Egypt was truly surprising, and independent of that made up into articles of dress, the great abundance used for enveloping the mummies, both of men and animals, shows how large a supply must have been kept ready for the constant demand at home, as well as for that of the foreign market.

That the bandages employed in wrapping the dead are of linen, and not, as some have imagined,

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* Strabo, xvii. p. 559.

† Vol. I. p. 280., *vide* Herodot. ii. 81.

of cotton, has been already ascertained by the most satisfactory tests; and though no one, even among the unscientific inhabitants of modern Egypt, ever thought of questioning the fact, received opinion in Europe had till lately decided that they were cotton; and it was forbidden to doubt that "the bands of *byssine* linen" said by Herodotus[*] to have been used for enveloping the mummies, were cotton. My own impression had certainly been that the mummy cloths were invariably linen, but positive experience had not then confirmed my opinion, and I reluctantly yielded to the universal belief, and concluded that some at least might be cotton.

The accurate experiments made, with the aid of powerful microscopes, by Dr. Ure[†], Mr. Bauer, Mr. Thompson, and others, on the nature of the fibres of linen and cotton threads[‡], have shown that the former invariably present a cylindrical form, transparent, and articulated, or jointed like a cane, while the latter offer the appearance of a flat ribbon, with a hem or border at each edge; so that there is no possibility of mistaking the fibres of either, except perhaps, when the cotton is in an unripe state, and the flattened shape of the centre is less apparent. The results having been found similar in every instance, and the structure of the fibres thus unquestionably determined, the threads of mummy cloths were submitted to the same test, and no exception was found to their being linen, nor were they even a mixture of linen and cotton thread.

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[*] Herodot. ii. 86. "*Σινδονος βυσσινης τελαμωσι.*"

[†] *Vide* Dr. Ure's Philosophy of Manufactures, p. 95.

[‡] *Vide* Mr. Thompson on the Mummy cloth of Egypt.

The fact of the mummy cloths being linen is therefore decided. It now remains to inquire into the nature of the *byssus*, in which I confess considerable difficulty presents itself, owing to the Hebrew *shash* being translated *byssus* in the Septuagint version, and, in our own, "fine linen[*];" and to shash being the name applied at this day by the Arabs to fine muslin, which is of cotton and not of linen; for the similarity of the words in these cognate languages argues in favour[†] of the same meaning. On the other hand, Herodotus says the mummy cloths were "of *byssine sindon*[‡]," and they are found to be invariably linen: he uses the expression "tree wool" to denote cotton[§]; and Julius Pollux adopts the same name[‖], distinguishing it also from byssus, which he calls a species of Indian flax. The use of the two words *byssus* and *linon* present no difficulty, since they might be employed, like our flax and linen, to signify the plant, and the substance made from it.

Cotton cloth, however, was among the manufactures of Egypt, and dresses of this material were worn by all classes. Pliny states that the Egyptian priests, though they used linen, were particularly partial to cotton robes*, and "cotton garments," supplied by the government for the use of the temples†, are distinctly mentioned in the Rosetta stone. Herodotus and Plutarch‡ affirm that linen was preferred, owing as well to its freshness in a hot climate, as to its great tendency to keep the body clean, and that a religious prejudice forbade the priests to wear vestments of any other quality§; we may, however, conclude that this refers to the inner portion of the dress; and the prohibition of entering a temple with cotton or woollen garments, may have led to the notion that none but linen were worn by them at any time. The same custom was adopted by the votaries of Isis, when her rites were introduced by the Greeks and Romans||; and linen dresses were appropriated to those who had been initiated¶ in the sacred mysteries.

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[*] In Exodus, xxv. 4. "*βυσσον κεκλωσμενην*;" in Coptic "shens."

[†] There are instances to the contrary, as *kussuf* "silver," in Hebrew, and *kussub* "gold lace," in Arabic, and others.

[‡] Herodot. loc. cit. *Sindon* is unquestionably linen.

[§] Herodot. iii. 47. "*Ειριοισι απο ξυλου.*"

[‖] J. Poll. Onom. vii. 17.

Whatever restrictions may have been in force respecting the use of cotton among the priesthood, it is probable that other individuals were permitted to consult their own choice on this point; and it was immaterial whether they preferred, during life, the coolness of flax, or the softness of cotton raiment, provided the body, after death, was en-

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[*] Plin. xix. 8.

[†] "The sacred robes with which the statues of the gods are adorned." Plut. de Is. s. 78.

[‡] Plut. de Is. s. 4.

[§] Herodot. ii. 37. "The priests . . . wear only one robe of linen, and sandals of the byblus. They are not allowed to have any other vestment, or covering to the feet."

[||] Plut. de Is. s. 3.

[¶] Apul. Metam. lib. xi.

veloped in bandages of linen[*]; and this regulation accounts for the mummy cloths of the poorest individuals being invariably found of that material.

It was not only for articles of dress that cotton was manufactured by the Egyptians: a great quantity was used for the furniture of their houses, the coverings of chairs and couches, and various other purposes; and a sort of cloth was made of the united filaments of flax and cotton. This is mentioned by Julius Pollux, who, after describing the cotton plant as an Egyptian production, and stating that cloth was manufactured of the "wool of its nut," says they sometimes "make the woof of it, and the warp of linen[†];" a quality of cloth still manufactured by the modern Egyptians.

From the few representations which occur in the tombs of Thebes, it has been supposed that the Egyptian looms were of rude construction, and totally incapable of producing the fine linen so much admired by the ancients; and as the paintings in which they occur were executed at a very early period, it has been conjectured that, in after times, great improvements took place in their construction. But when we consider with what simple means oriental nations are in the habit of executing the most delicate and complicated work, we cease to feel surprised at the apparent imperfection of the mechanism, or instruments used by the Egyptians; and it is probable that their far-famed "fine linen" mentioned in scripture, and by ancient writers[*], was produced from looms of the same construction as those represented in the paintings of Thebes and Eilethyas. Nor was the praise bestowed upon that manufacture unmerited[†]; and as I have already observed, the quality of some linen in my possession fully justifies it, and excites equal admiration at the present day, being, to the touch comparable to silk, and not inferior in texture to our finest cambric.

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[*] In England woollen cloth has been chosen for this purpose, in order to encourage the staple commodity of the country.

[†] J. Poll. Onom. vii. 17.

The mummy cloths are generally of a very coarse quality; and little attention was bestowed on the disposition of the threads, in the cloths of ordinary manufacture. Mr. Thomson, who examined many specimens of them, is of opinion that the number of threads in the warp invariably exceeded those of the woof, occasionally even by four times the quantity; and as his observations are highly interesting, I shall introduce an extract from his pamphlet on the subject.

"Of the products of the Egyptian loom, we know scarcely more than the mummy pits have disclosed to us; and it would be as unreasonable to look through modern sepulchres for specimens and proofs of the state of manufacturing art amongst ourselves, as to deduce an opinion of the skill of the Egyptians, from those fragments of cloth, which envelope their dead, and have come down, almost unchanged, to our own time. The curious or costly fabrics which adorned the living, and were the pride of the industry and skill of Thebes, have perished ages ago. There are, however, amongst these remains, some which are not unworthy of notice, which carry us back into the workshops of former times, and exhibit to us the actual labours of weavers and dyers of Egypt, more than 2000 years ago.

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[*] Pliny allows that the Egyptians invented the art of weaving, vii. 56.; and Athenæus ascribes it to Pathymias the Egyptian. Deipn. lib. ii.

[†] Some was so fine that it obtained the appellation of "woven air."

"The great mass of the mummy cloth, employed in bandages and coverings, whether of birds, animals, or the human species, is of coarse texture, especially that more immediately in contact with the body, which is generally impregnated with resinous or bituminous matter. The upper bandages, nearer the surface, are finer. Sometimes the whole is enveloped in a covering coarse and thick, and very like the sacking of the present day: sometimes in cloth coarse and open, like that used in our cheese-presses, for which it might easily be mistaken. In the college of surgeons are various specimens of these cloths, some of which are very curious.

"The beauty of the texture, and peculiarity in the structure of a mummy cloth given to me by Mr. Belzoni, was very striking. It was free from gum, or resin, or impregnation of any kind, and had evidently been originally white. It was close and firm, yet very elastic. The yarn of both warp and woof was remarkably even and well spun. The thread of the warp was *double*, consisting of two fine threads twisted together. The woof was single. The warp contained 90 threads in an inch; the woof, or weft, only 44. The fineness of these materials, estimated after the manner of cotton yarn, was about thirty hanks in the pound.

"The subsequent examination of a great variety of mummy cloths showed, that the disparity between the warp and woof belonged to the system of manufacture, and that the warp generally had twice or thrice, and not seldom four times, the number of threads in an inch, that the woof had: thus, a cloth containing 80 threads of warp in the inch, of a fineness about 24 hanks in the pound, had 40 threads in the woof: another with 120 threads of warp, of 30 hanks, had 40; and a third specimen only 30 threads in the woof. These have each respectively double, treble, and quadruple the number of threads in the warp that they have in the woof. This structure, so different from modern cloth, which has the proportions nearly equal, originated, probably, in the difficulty and tediousness of getting in the woof, when the shuttle was thrown by hand, which is the practice in India at the present day, and which there are weavers still living old enough to remember the universal practice in this country."

Mr. Thomson then mentions some fragments of mummy cloths, sent to England by the late Mr. Salt, which he saw in the British Museum. They were "of different degrees of fineness; some fringed at the ends, and some striped at the edges." "My first impression," he continues "on seeing these cloths, was that the finest kinds were *muslin*, and of Indian manufacture, since we learn from the "Periplus of the Erythrean Sea," ascribed to Arrian, but more probably the work of some Greek merchant himself engaged in the trade, that muslins from the Ganges were an article of export from India to the Arabian gulf: but this suspicion of their being cotton was soon removed by the microscope of Mr. Bauer, which showed that they were all, without exception, linen. Some were thin and transparent, and of very delicate texture. The finest appeared to be made of yarns of near 100 hanks in the pound, with 140 threads in the inch in the warp, and about 64 in the woof. A specimen of muslin in the museum of the East India house, the finest production of the Dacca loom, has only 100 threads in an inch in the warp, and 84 in the woof; but the surprising fineness of the yarns, which, though spun by hand, is not less than 250 hanks in the pound, gives to this fabric its unrivalled tenuity and lightness.

"Some of the cloths were fringed at the ends, and one, a sort of scarf, about four feet long, and twenty inches wide, was fringed at both ends. Three or four threads twisted together with the fingers to form a strong one, and two of these again twisted together, and knotted at the middle and at the end to prevent unravelling, formed the fringe, precisely like the silk shawls of the present day.

"The selvages of the Egyptian cloths are generally formed with the greatest care, and are well calculated by their strength to protect the cloth from accident. Fillets of strong cloth or tape also secure the ends of the pieces from injury, showing a knowledge of all the little resources of modern manufacture. Several of the specimens, both of fine and coarse cloth, were bordered with blue stripes of various patterns, and in some alternating with narrow lines of another colour. The width of the patterns varied from half an inch to an inch and a quarter. In the latter were seven blue stripes, the broadest about half an inch wide nearest the selvage, followed by five very narrow ones, and terminated by one an eighth of an inch broad. Had this pattern, instead of being confined to the edge of the cloth, been repeated across its whole breadth, it would have formed a modern gingham, which we can scarcely doubt was one of the articles of Egyptian industry.

" A small pattern about half an inch broad formed the edging of one of the finest of these cloths, and was composed of a stripe of blue, alternating with three lines of a fawn colour, forming a simple and elegant border. These stripes were produced in the loom by coloured threads previously dyed in the yarn. The nature of the fawn colour I was unable to determine. It was too much degraded by age, and the quantity too small to enable me to arrive at any satisfactory conclusion. Though I had no doubt the colouring matter of the blue stripes was indigo, I subjected the cloth to the following examination. Boiled in water for some time, the colour did not yield in the least; nor was it at all affected by soap, nor by strong alkalies: sulphuric acid, diluted only so far as not to destroy the cloth, had no action on the colour. Chloride of lime gradually reduced, and at last destroyed it. Strong nitric acid, dropped upon the blue, turned it orange, and in the same instant destroyed it. These tests prove the colouring matter of the stripes to be indigo.

"This dye was unknown to Herodotus, for he makes no mention of it. It was known to Pliny, who, though ignorant of its true nature, and the history of its production, has correctly described the most characteristic of its properties, the emission of a beautiful purple vapour when exposed to heat. Had his commentators been acquainted with the sublimation of indigo, it would have saved many learned doubts. We learn from the Periplus, that it was an article of export from Barbarike on the Indus, to Egypt, where its employment by the manufacturers of that country, probably from a remote period, is clearly established by the specimens here described."

I have a piece of cloth, brought from Thebes by Mr. Arundel, which offers a very good instance of the coloured border mentioned by Mr. Thomson. It is of ordinary quality, the number of threads in the inch are ninety-six in the warp, and thirty-four in the woof; and the border consists of one broad band and six narrow stripes, of a blue colour, evidently dyed with indigo; the band which is nearest the selvage is one inch and two tenths in breadth, the others consist each of two threads, in the direction of the warp, with the exception of the innermost one, which is of five threads; and the dividing line between the fourth and fifth is varied by the introduction of a blue thread down the centre.* The rest of the cloth has the usual yellowish tinge, "supposed to arise from some astringent preparation employed for its preservation," which, according to Mr. Thomson, imparts to water a similar colour, but offers no trace of tannin. "In none of the specimens I have examined," he adds, "did either gelatine or albumen, or solution of iron, afford any precipitate; but the subacetate of lead produced a cloud, indicating the presence of extractive matter."

It is evident that the colour was imparted to the threads previous to the cloth being made†, as the blue remains unaltered; and the cloths with broad coloured borders are the more curious, as they illustrate the representations in the paintings, and show that they were similar to those made by the looms used in the age of the Pharaohs of the 16th and 18th dynasties, which occur in the tombs at Eilethyas and Thebes; and it is curious to see the Nubians wearing shawls with the same blue borders, manufactured in the valley of the Nile, at the present day.

Another piece of linen, which I obtained at Thebes, has 152 threads in the warp, and 71 in the woof, to each inch; it is of a much darker hue than the cloth just mentioned, and was perhaps dyed with the *carthamus tinctorius* [*], or saff-flower, which Mr. Thomson supposes to have been used for this purpose. The piece of fine linen, previously alluded to, is of the same light brown colour. Some idea may be given of its texture, from the number of threads in the inch[†], which is 540 (or 270 double threads)[‡] in the warp; and the limited proportion of 110 in the woof[§], shows the justness of Mr. Thomson's observation, that this disparity belonged to their "system of manufacture," since it is observable even in the finest quality of cloth.

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* *Vide* woodcut, No. 350. *fig.* 4.

† As was the case with the threads used by the Israelites, Exod. xxxv. 25. "And all the women that were wise-hearted did spin with their hands, and brought that which they had spun, both of blue, and of purple, and of scarlet, and of fine linen."

Another very remarkable circumstance in this specimen is, that it is covered with small figures and hieroglyphics, so finely drawn, that here and there the lines are with difficulty followed by the eye; and as there is no appearance of the ink having run in any part of the cloth, it is evident they had previously prepared it for this purpose.

Pliny cites four qualities of linen, particularly noted in Egypt: the Tanitic, and Pelusiac, the Butine, and the Tentyritic; and mentions in the same place[||] the cotton tree of Egypt, which he confines to the upper country. He also states that the quantity of flax, cultivated in Egypt, was accounted for, by their exporting linen to Arabia and

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[*] I am still doubtful if it was indigenous in Egypt.

[†] Some of our cambric has only 160 in an inch of the warp, and 140 of the woof.

[‡] *Vide suprà*, p. 120. and 121.

[§] The Egyptians, instead of throwing the shuttle, appear to have put in the threads by means of a rod with a hook at either end. *Vide* wood-cuts, No. 91. and 354.

[||] Plin. xix. c. 1. "Superior pars Ægypti in Arabiam vergens gignit fruticem, quem aliqui gossipion vocant, plures xylon, et ideo lina inde facta xylina."

India; and the quality of that produced by the Egyptian looms is shown to have been far superior to any other.

The threads used for nets were remarkable for their fineness; "and so delicate were some of them," says Pliny[*], "that they would pass through a man's ring, and a single person could carry a sufficient number of them to surround a whole wood. Julius Lupus, who died while governor of Egypt, had some of these nets, each string of which consisted of 150 threads; a fact perfectly surprising to those who are not aware, that the Rhodians preserve to this day, in the Temple of Minerva, the remains of a linen corslet, presented to them by Amasis, king of Egypt, whose threads are composed each of 365 fibres; and in proof of the truth of this, Mutianus, who was thrice consul, lately affirmed at Rome, that he had examined it; and the reason of so few fragments remaining was attributable to the curiosity of those who had frequently subjected it to the same scrutiny."

Herodotus mentions this corslet[†], and another, presented by Amasis to the Lacedæmonians, which had been carried off by the Samians; "it was of linen, ornamented with numerous figures or animals, worked in gold and cotton. Each thread of the corslet was worthy of admiration.[‡] For, though very fine, every one was composed of 360 other threads, all distinct; the quality being similar to that dedicated to Minerva, at Lindus, by the same monarch."

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[*] Plin. xix. 1.

[†] Herodot. ii. 182., and iii. 47.

[‡] Herodot. iii. 47.

Many of the Egyptian stuffs presented various patterns worked in colours by the loom, independent of those produced by the dyeing or printing process, and so richly composed, that they vied with cloths embroidered with the needle.* The art of embroidery† was commonly practised in Egypt. We find that the Hebrews, on leaving the country, took advantage of the knowledge they had there acquired to make a rich "hanging for the door of the tent, of blue, and purple, and scarlet, and fine twined linen, wrought with needlework‡;" a coat of fine linen was embroidered for Aaron; and his girdle was "of fine twined linen, and blue, and purple, and scarlet, of needlework."§

The gold thread used for these purposes is supposed to have been beaten out with the hammer‖, and afterwards rounded; and even the delicate net made by Vulcan, which was so fine that the gods themselves were unable to see it, is represented to have been forged on his anvil with the hammer.¶ Pliny mentions cloth woven with gold threads, sometimes entirely of those materials, without any woollen or linen ground, as were the garment of Agrippina*, the tunic of Heliogabalus†, and that worn by Tarquinius Priscus, mentioned by Verrius.‡

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* Martial, xiv. Epigr. 50.

> "Hæc tibi Memphitis tellus dat munera; victa est
> Pectine Niliaco jam Babylonis acus."

† *Vide* Ezekiel, xxvii. 7. "Fine linen, with broidered work from Egypt."

‡ Exod. xxvi. 36., xxvii. 16., xxxvi. 37., and xxxviii. 18.

§ Exod. xxviii. 39., and xxxix. 29.

‖ Conf. Exod. xxxix. 3. "And they did beat the gold into thin plates, and cut it into wires, to work it in the blue, and in the purple, and in the scarlet, and in the fine linen."

¶ Hom. Od. viii. 274.

"Coloured dresses," says Pliny§, "were known in the time of Homer, from which the robes of triumph were borrowed: and from the Phrygians having been the first to devise the method of giving the same effect with the needle, they have been called *Phrygiones.* But to weave cloth with gold thread was the invention of an Asiatic king, Attalus‖, from whom the name Attalic was derived: and the Babylonians were most noted for their skill in weaving cloths of various colours."

The question still remains undecided respecting the time when silver thread came into use; and as no mention of silver stuffs occurs in the writings of ancient authors, it has been supposed that its introduction was of late date. Silver wire, however, was already known in Egypt at the remote epoch of the 18th dynasty, as is proved by being found at Thebes of the time of the third Thothmes: nor is there any reason to suppose it was then a novel invention; and it was probably known and used as early as gold wire, which we find attached to rings bearing the date of Osirtasen the First.

This wire is supposed not to have been drawn, like our own, through holes in metal plates, but to have been beaten out, and rounded with the file: but the appearance of some found at Thebes almost justifies the conclusion that a mode of drawing it was not unknown to them; and the omission of every representation of the process in the paintings cannot be adduced as an argument against it, since they have also failed to introduce the casting of metals, and various other arts, with which they were undoubtedly acquainted.

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* Plin. xxxiii. 3. "Auro textili sine alia materie."

† Lamprid. Vit. Heliog. c. 23.

‡ Plin. loc. cit.

§ Plin. viii. 48.

‖ Attalus, king of Pergamus.

It is reasonable to suppose that wire-drawing was first attempted with the most ductile metals, that gold and silver were first used, and brass and iron at a much later period; and this is further argued by the probability of wire having been originally employed for ornamental purposes. Gold thread and wire were always made entirely of that metal, even to the time of the latter Roman emperors*: nor are there any instances of flattened wire wound round silk or linen threads, or of silver or other wire gilt, in the ruins of Herculaneum and Pompeii. That the Egyptians had arrived at great perfection in the art of making the thread is evident, from its being sufficiently fine for weaving into cloth, and for embroidery; and the exceeding delicacy of the linen corslet of Amasis †, on which numerous figures of animals were worked in gold, required a proportionate degree of fineness in the gold thread used for the purpose.

The coloured dresses represented in the Egyptian paintings, worn by women of rank, and by the deities, much resemble our modern chintzes, in the

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[*] Probably till the reign of Aurelian.

[†] Herod. iii. 47.

style of their patterns, though it is probable that they were generally of linen instead of calico: some were probably worked with the needle*, and others woven with gold threads.

I have already observed that the Egyptians possessed a knowledge of the effect of acids on colour, and submitted the cloth they dyed to one of the same processes adopted in our modern manufactories; as is plainly pointed out by Pliny in the following passage†: — "Pingunt et vestes in Ægypto inter pauca mirabili genere, candida vel postquam attrivere illinentes non coloribus, sed colorem sorbentibus medicamentis. Hoc cum fecere, non apparet in velis: sed in cortinam pigmenti serventis mersa, post momentum extrahuntur picta. Mirumque, cum sit unus in cortina colos, ex illo alius atque alius fit in veste, accipientis medicamenti qualitate mutatus, nec postea ablui potest: ita cortina non dubie confusura colores si pictos acciperet." "Moreover in Egypt they stain cloths in a wonderful manner. They take them in their original state, quite white, and imbue them, not with a dye, but with certain drugs which have the power of absorbing and taking colour. When this is done, there is still no appearance of change in the cloths; but so soon as they are dipped into a bath of the pigment, which has been prepared for the purpose, they are taken out properly coloured. The singular thing is, that though the bath contains only one colour, several hues are imparted to the piece, these changes depending on the nature of the drug employed: nor can the colour be afterwards washed off; and surely if the bath had many colours in it, they must have presented a confused appearance on the cloth."

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* "Candida Sidonio perlucent pectora filo,
Quod Nilotis acus percussum pectine Serum
Solvit." Lucan. Phars. x. 141.

† Plin. xxxv. 11.

From this it is evident that the cloth was prepared before steeping; the *momentary* effect he mentions could only be produced by the powerful agency of mordants; and they not only used them to make the cloth take the colour equally, but also to change the hues.

Whether the Egyptians really understood the principle, on which the salts and acids of the mordants acted, or calculated their effects solely from the experience they had acquired, it is difficult to decide. They had long been used in Europe, before their chemical agency was properly explained; and when the term mordant was first applied by the French dyers, they imagined "that the intention of passing the substances, which were to be dyed, through certain saline liquors, was to corrode something that opposed the entering of the colouring principle, and to enlarge the pores of the substances;" (the effect of acids in changing the hues being a later discovery;) we cannot therefore positively prove that the Egyptians had a knowledge of chemistry, though from their long experience, and from their skill in the employment of the metallic oxides, we may find strong reasons to infer it. For if at first ignorant of the reason of such changes, it is probable that in process of time they were led to investigate the causes, by which they were effected.

Many discoveries, and even inventions, are more the effect of chance than of studious reflection, and the principle is often the last to be understood. In discoveries this is generally the case, in inventions frequently. But when men have observed, from long practice, a fixed and undeviating result, their curiosity naturally becomes excited, the thirst for knowledge, and above all the desire of benefiting by the discovery, prompt them to scrutinise the causes to which they are so much indebted; and few people, who have made any advance in the arts of civilised life, long remain ignorant of the means of improving their knowledge.

We may therefore suppose, some general notions of chemistry, or at least of chemical agency, were known to the Egyptians; and the beautiful colours they obtained from copper, the composition of various metals, and their knowledge of the effects produced on different substances by the salts of the earth, tend to confirm this opinion.

The Egyptian yarn seems all to have been spun with the hand, and the spindle is seen in all the pictures representing the manufacture of cloth. Spinning was principally the occupation of women*; but men also used the spindle, and were engaged in the loom; though not as Herodotus† would lead us to suppose, to the exclusion of women,

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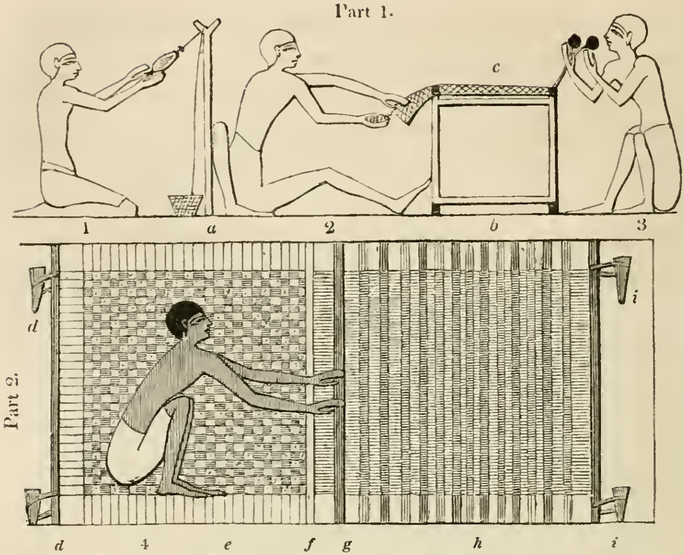
* *Vide* wood-cut, No. 91. Vol. II. p. 60.

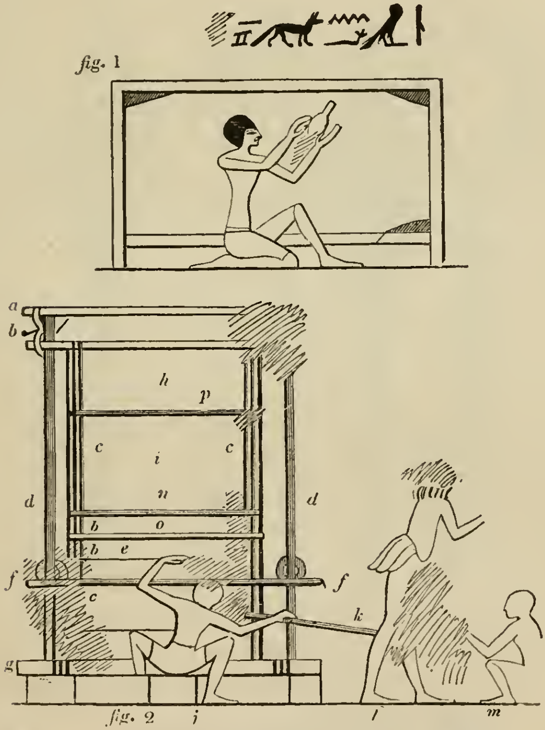
† Herodot. ii. 35. Sophocles, Œdip. Col. v. 352. makes the same remark.



No. 353. Part 1. Men engaged in spinning, and making a sort of net-work.
2. The horizontal loom, or perhaps mat-making.
Beni Hassan.

who he pretends undertook the duties of men in other countries, "by going to market, and engaging in business, while the men, shut up in the house, worked at the loom." Men, to this day, are employed in making cloth, in Egypt and in other countries, but it cannot be said that they have relinquished their habits for those of women; and we find from the paintings executed by the Egyptians themselves, far more authentic and credible than the casual remarks of a Greek, that both men and women were employed in manufacturing cloth.

"Other nations," continues the historian, "make cloth by pushing the woof upwards, the Egyptians, on the contrary, press it down;" and this is confirmed by the paintings * which represent the process of making cloth; but at Thebes, a man who is engaged in making a piece of cloth, with a coloured border or selvage, appears to push the woof upwards, the cloth being fixed above him, to the upper part of the frame. They had also the horizontal loom, which occurs at Beni Hassan and other places.



No. 354. Fig. 1. A piece of cloth on a frame. *Eilethyas.*
2. A loom. *Thebes.*

k is a shuttle, not thrown, but put in with the hand. It had a hook at each end. *Vide* woodcut, No. 91. fig. 2.

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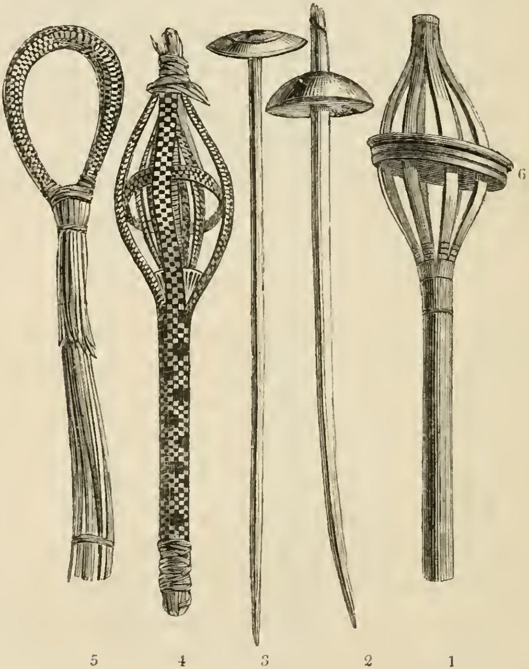
* In woodcut, No. 91. *fig.* 2. Vol. II. p. 60.

In the hieroglyphics over persons employed with the spindle, it is remarkable that the word *saht*, which in Coptic signifies to twist, constantly occurs. The spindles were generally small, being about one foot three inches in length, and several have been found at Thebes, and are now preserved in the museums of Europe.* They were generally of wood, and in order to increase



No 355. Spindles. *British and Berlin Museums.*

Fig. 1 is a sort of cane split at the top to give it a globular shape.
2 has the head of gypsum.
3 entirely of wood.
4 of plaited or basket work.
5 the loop to put over the twine.
6 a ring of wood for securing the twine.

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[*] One of those in the British Museum, which I found at Thebes,” had some of the linen thread with it. *Vide* wood-cut, No. 355. *fig.* 2.

their impetus in turning, the circular head was occasionally of gypsum, or composition: some, however, were of a light plaited work, made of rushes, or palm leaves, stained of various colours, and furnished with a loop of the same materials, for securing the twine after it was wound.*

Besides the use of the spindle†, and the form of the loom, we find the two principal purposes, to which flax was applied, represented in the paintings of the tombs: and at Beni Hassan the mode of cultivating the plant, in the same square beds now met with throughout Egypt, (much resembling our salt-pans,) the process of beating the stalks, and making them into ropes, and the manufacture of a piece of cloth, are distinctly pointed out.

It is, however, possible that the part of the picture, where men are represented pouring water from earthen pots, may refer to the process of steeping the stalks of the plant, after they were cut; the square spaces would then indicate the different pits in which they were immersed, containing some less, some more, water, according to the state in which they were required; and this is rendered more probable by the flight of steps, for ascending to the top of the raised sides of the pits, which would not have been introduced if the level ground were intended.

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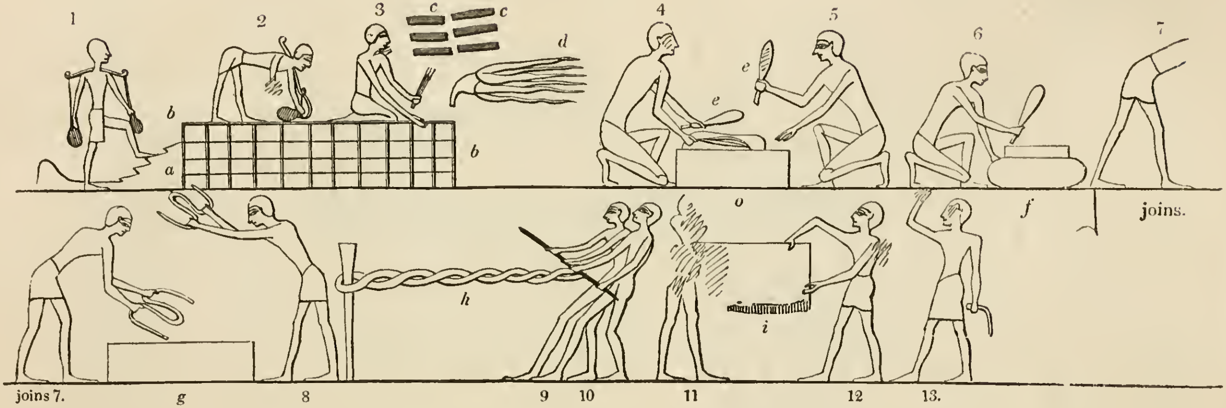
* *Vide* wood-cut, No. 355. *fig.* 5. Another of wood, *fig.* 6.

† The ordinary distaff does not occur in these subjects, but we may conclude they had it; and Homer mentions one of gold, given to Helen by "Alcandra, the wife of Polybus," who lived in Egyptian Thebes. Od. iv. 131.



No. 356. Preparing the flax, beating it, and making it into twine and cloth. *Beni Hassan.*

a steps leading up to the top of the pits. *b b*, where the flax was steeped.
c c the flax taken by *fig.* 3. to dry, previous to beating.
d the stalks fresh cut.

Fig. 1 brings water in earthen pots.
4 and 5 are engaged in beating it with mallets, *e e*.
7 and 8 striking it, after it is made into yarn, on a stone, *g*.
9 and 10 twisting the yarn into a rope.
11 and 12 show that a piece of cloth, *i*, has been made of the yarn.
13 a superintendent.

The steeping, and the subsequent process of beating the stalks with mallets, illustrate the following passage of Pliny* upon the same subject: — "The stalks themselves are immersed in water, warmed by the heat of the sun, and are kept down by weights placed upon them; for nothing is lighter than flax. The membrane, or rind, becoming loose is a sign of their being sufficiently macerated. They are then taken out, and repeatedly turned over in the sun, until perfectly dried; and afterwards beaten by mallets on stone slabs. That which is nearest the rind is called *stupa*, 'tow,' inferior to the inner fibres, and fit only for the wicks of lamps. It is combed out with iron hooks, until all the rind is removed. The inner part is of a whiter and finer quality. Men are not ashamed to prepare it. . . . . . . After it is made into yarn, it is polished by striking it frequently on a hard stone, moistened with water; and when woven into cloth it is again beaten with clubs, being always improved in proportion as it is beaten."

They also parted and cleansed the fibres of the flax with a sort of comb, probably answering to the iron hooks mentioned by Pliny; two of which, found with some tow at Thebes, are preserved in the Berlin museum; one having twenty-nine, the other forty-six, teeth.†

The border of some of their cloths consists of long fringes, formed by the projecting threads of the warp, twisted together, and tied at the end in one or more knots, to prevent their unravelling, "precisely," as Mr. Thomson observes, "like the silk shawls of the present day;" and specimens of the same borders, in pieces of cloth found in the tombs, may be seen in the British Museum, and other collections.*

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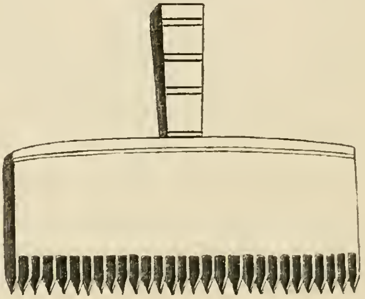
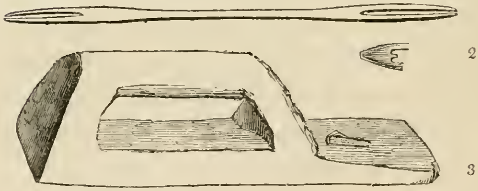
* Plin. xix. 1.

† *Vide* wood-cut, No. 357.

The sculptures, as well as the cloths which have been discovered, perfectly bear out Herodotus in his statement that they had the custom of leaving a fringe to their pieces of linen†, which, when the dresses were made up, formed a border round the legs; but they do not appear to have



No. 357



No. 358

No. 357 wooden comb found with some tow. *Berlin Museum.*
No. 358 fig. 1 netting needle of wood in Mr. Salt's collection.
2 part of another of bronze, of later date, found by me at Berenice.
3 wooden plane for smoothing or pressing cloth. *From Thebes.*

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* *Vide* woodcut, No. 350.

† Herodot. ii. 81.

been universally worn. This kind of dress he calls *calasiris*. When the fringe was wanting, the border was hemmed, which had the same effect of preventing the unravelling of the cloth. The Jews wore a similar kind of fringed dress, and Moses[*] commanded the children of Israel to "make them fringes in the borders of their garments, . . . and . . . put upon the fringe of the borders a ribband of blue."

Besides the process of making cloth, that of smoothing, or calendering, is represented in the paintings; which appears to have been done by means of wooden rods, passed to and fro over the surface; but from the appearance of some of the fine linen found in the tombs, we may conjecture that much greater pressure was sometimes used for this purpose, and such as could only be applied by a press, or cylinders of metal.

For smoothing linen after washing, a wooden substitute for what we call an *iron* was used by the Egyptian washerwomen, some of which have been found at Thebes, six inches in length, made of athul or tamarisk wood.[†]

I have had occasion to observe[‡] that the Egyptians had carpets, which, according to Diodorus[§], were spread for the sacred animals, and are noticed by Homer[||], as a very early invention; they were of wool[¶], but of their quality we are unable to form any opinion, the fragments discovered in the tombs being very imperfectly preserved. Some portions of woollen work have been found at Thebes, which presented the appearance of a carpet; and a small rug was lately brought to England, and is now in the possession of Mr. Hay, whose valuable collection of drawings from Thebes and other parts of Egypt, I have already noticed.

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[*] Numbers, xv. 38.

[†] *Vide* wood-cut, No. 358. *fig*. 3.

[‡] Vol. II. p. 201.

[§] Diodor. i. 34.

[||] Hom. Od. iv. 124., and called *tapéta*, the modern name of a carpet.

[¶] As in Homer, "*Ταπητα . . . μαλακου εριοιο*," loc. cit.

This rug is eleven inches long by nine broad. It is made like many carpets of the present day, with woollen threads on linen string. In the centre is the figure of a boy in white, with a goose above it, the hieroglyphic of "child," upon a green ground; around which is a border composed of red and blue lines; the remainder is a ground of yellow, with four white figures above and below, and one at each side, with blue outlines and red ornaments; and the outer border is made up of red, white, and blue lines, with a fancy device projecting from it, with a triangular summit, which extends entirely round the edge of the carpet. Its date is uncertain; but from the child, the combination of the colours, and the ornament of the border, I am inclined to think it really Egyptian.

I have also been informed by Lord Prudhoe, that in the Turin museum he met with "some specimens of worked worsted upon linen, in which the linen threads of the weft had been picked out, and the coloured worsted sewed on the warp."

ROPE-MAKING.

I have noticed the use of flax for making ropes, string, and various kinds of twine; for large ropes, however, of ordinary quality, and for common purposes, the *leef*, or fibres of the date tree, were employed, as at the present day; and many specimens of these durable materials have been found in the excavations of Upper and Lower Egypt.

In a tomb at Thebes, of the time of Thothmes III., is represented the process of twisting thongs of leather, which, as it is probably the same as that adopted in rope-making, may be properly introduced here.

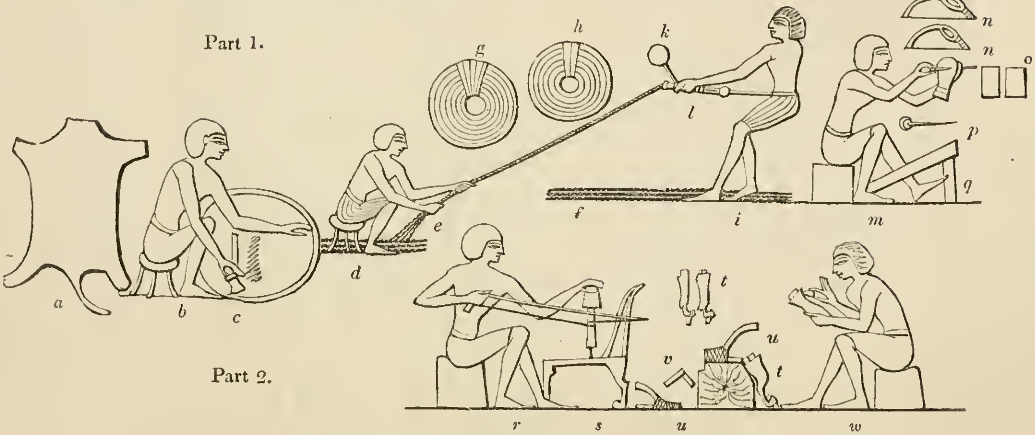
The ends of four thongs were inserted and fastened into a hollow tube, from the side of which a bar projected, surmounted by a heavy metal ball; and the man, who twisted them, held the tube in his right hand, whirling it round, as he walked backwards, by means of the impetus given by the ball. A band, attached to a ring at the other end of the tube, went round his body, in order to support it and give it a free action, and the ring turned upon a nut, to prevent the band itself from twisting.

At the other extremity of the walk, a man, seated on the ground, or on a low three-legged stool, let out the separate thongs, and kept them from becoming entangled. Behind him sat another, who, with the usual semicircular knife, cut the skin into strips, as he turned it round; showing that what

No. 359.

Part 1. Cutting and twisting thongs of leather.

a a skin hanging up in the shop, indicating the trade of leather cutter.
b cutting thongs out of a circular piece of skin.
d arranges the separate thongs, which are twisted by *i*, and when finished are bound together and hung up in the shop *g h*.
k a weight, which gives a greater impetus to the tube *l* when thrown round.
m cobbler, perforating the sole of a sandal to receive the thong.
n n thongs ready for fixing to the sole.
o pieces of leather, ready for cutting into soles.
p an awl.
q a stand.



Part 2. Carpenters.

r drills a hole in the seat of a chair *s*.
t t legs of chairs.
u u hatchets.
v a right angle.
w man planing or polishing the leg of a chair.

we term the circular cut was known to the ancient Egyptians at this early period, and that they had already adopted this mode of obtaining the longest thongs from a single piece of leather.* When finished, the twisted thongs were wound round a hollow centre, through which the end was passed, and repeatedly bound over the concentric coils in the same manner as ropes.

Some, indeed, have supposed the present subject to represent rope-making; but the presence of the skin on the left, and the shoemakers on the right, forming a continuation of the picture, sufficiently prove that they are engaged in preparing leathern thongs for sandals, and other similar purposes.

Their nets were made of flax-string †, both for fishing and fowling: and portions of them have been discovered at Thebes, and are preserved in our European museums. The netting needles‡ were of wood, very like our own, split at each end, and between ten and eleven inches in length, and others were of bronze, with the point closed.

Sieves were often made of string, but some of an inferior quality, and, for coarse work, were constructed of small thin rushes or reeds (very similar to those used by the Egyptians for writing, and frequently found in the tablets of the scribes); a specimen of which kind of sieve is preserved in the Paris museum. The paintings also represent them made of the same materials; and indeed it is probable that the first they used were all of this humble quality, since the hieroglyphic indicating a sieve is evidently borrowed from them.

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* This calls to mind the fable of Dido's purchasing as much land in Africa, as could be covered by a bull's hide, upon which she built Byrsa, the origin of Carthage. Vir. Æn. i. 368.

† Conf. Isaiah, xvii. 9. "They that work in fine flax, and they that weave networks." *Vide* Plin. 19. 1., and *suprà*, p. 127.

‡ *Vide* wood-cut, No. 358. *figs.* 1, 2.

THE PAPYRUS.

The Egyptians were not less famed for their manufacture of paper, than for the delicate texture of their linen. The plant from which it was made, the *Cyperus papyrus* of modern botanists, mostly grew in Lower Egypt, in marshy land, or in shallow brooks*, and ponds, formed by the inundation of the Nile, where they bestowed much pains on its cultivation.

The right of growing, and selling it, belonged, as I have already observed, to the government, who made a great profit by its monopoly; and though we frequently find mention of the use of the byblus or papyrus, for constructing canoes or rude punts, for making baskets, parts of sandals, sails, and for numerous other common purposes, it is evident, that we are to understand, in these instances, some other species of the numerous family of Cyperus; which too is unequivocally shown by Strabo, when he distinguishes the ordinary from "the hieratic byblus."

The papyrus, or byblus hieraticus, of the geographer, our Cyperus papyrus, was particularly cultivated in the Sebennytic nome * : other parts of the Delta also produced it, and probably even some districts in Upper Egypt. The paper made from it differed in quality; being dependent upon the growth of the plant, and the part of the stalk whence it was taken; and we find many of the papyri which have been preserved vary greatly in their texture and appearance. They are generally fragile, and difficult to unrol, until rendered pliant by gradual exposure to steam, or the damp of our climates; and some are so brittle that they appear to have been dried by artificial means.

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* Isaiah, xix. 7. "The paper reeds by the brooks, by the mouth of the brooks."

We are however less surprised at the effect of the parched climate of Upper Egypt, when we consider the length of time they have been kept beyond the reach of moisture, and observe that our drawing paper, after a very few years, becomes so dry in that country, that it is too brittle to fold without breaking. Indeed, those papyri which have not been exposed to the same heat, being preserved in the less arid climate of Lower Egypt, still preserve their pliability; and a remarkable proof of this is shown in one brought by me from Memphis, which may be bent, and even twisted in any way, without breaking, or without being more injured than a piece of common paper. The hieroglyphics from their style show it to be of an ancient Pharaonic age, and, what is remarkable, they present the name of the city, where the papyrus was found, Menofre, or Memphis.

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* Plin. xiii. 11.

The mode of making papyri, was this: — The interior of the stalks of the plant, after the rind had been removed, was cut into thin slices in the direction of their length, and these being laid on a flat board, in succession, similar slices were placed over them at right angles*; and their surfaces being cemented together by a sort of glue, and subjected to a proper degree of pressure, and well dried, the papyrus was completed. The length of the slices depended of course on the breadth of the intended sheet, as that of the sheet on the number of slices placed in succession beside each other, so that though the breadth was limited, the papyrus might be extended to an indefinite length.

The papyrus is now no longer used, paper from linen rags and other materials having superseded it; but some few individuals, following the example of the Cavaliere Saverio Landolina Nava, of Syracuse, continue to make it; and sheets from the plant, which still grows in the small rivulet formed by the fountain of Cyane, near Syracuse, are offered to travellers, as curious specimens of an obsolete manufacture. I have seen some of these small sheets of papyrus; the manner of placing the pieces is the same as that practised in former times; but the quality of the paper is very inferior to that of ancient Egypt, owing either to the preparation of the slices of the stalk, before they are glued together, or to the coarser texture of the plant itself, certain spots occurring here and there throughout the surface, which are never seen on those discovered in the Egyptian tombs.

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* The slices which were placed longways were called by the Romans *stamen*, the others crossing them *subtemen*, like the warp and the woof in cloth.

Pliny thus describes * the plant and the mode of making paper : —" The papyrus grows in the marsh lands of Egypt, or in the stagnant pools left inland by the Nile, after it has returned to its bed, which have not more than two cubits in depth. The root of the plant is the thickness of a man's arm ; it has a triangular stalk, growing not higher than ten cubits (fifteen feet), and decreasing in breadth towards the summit, which is crowned as with a thyrsus, containing no seeds, and of no use except to deck the statues of the gods. They employ the roots as fire-wood, and for making various utensils. They even construct small boats of the plant ; and out of the rind, sails, mats, clothes, bedding, and ropes ; they eat it either crude or cooked †, swallowing only the juice ; and when they manufacture paper from it, they divide the stem, by means of a kind of needle, into thin plates, or laminæ, each of which is as large as the plant will admit . . . ."

" All the paper is woven upon a table ‡, and is continually moistened with Nile water, which being thick and slimy, furnishes an effectual species of glue. § In the first place, they form upon a table, perfectly horizontal, a layer the whole length of the papyrus ; which is crossed by another placed

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* Plin. xiii. 11.

† Conf. Diod. i. 80.

‡ Plin. xiii. 12.

§ It is scarcely necessary to correct this misconception of Pliny, or to suggest the necessity of something more tenacious than Nile water.

transversely, and afterwards inclosed within a press. The different sheets are then hung in a situation exposed to the sun, in order to dry, and the process is finally completed by joining them together, beginning with the best. There are seldom more than twenty* slips, or stripes, produced from one stem of the plant.

"Different kinds of broad paper vary in breadth. The best is thirteen digits broad; the hieratic only eleven; the Fannian† ten, and the amphitheatric nine. The Saitic is still narrower, being only the breadth of the mallet; and the paper used for business is only six digits broad. Besides the breadth, the fineness, thickness, whiteness, and smoothness are particularly regarded; . . . when it is coarse it is polished with a (boar's) tooth, or a shell; but then the writing is more readily effaced, as it does not take the ink so well."‡

Pliny is greatly in error when he supposes that the papyrus was not used for making paper, before the time of Alexander the Great, since we meet with papyri of the most remote Pharaonic periods; and the same mode of writing on them is shown from the sculptures to have been common in the age of Suphis, or Cheops, the builder of the Great Pyramid, more than 2000 years before our era.

It is uncertain until what period paper made of the papyrus continued in general use—but there is evidence of its having been occasionally employed, to the end of the seventh century, when it was superseded by parchment. All public documents, under Charlemagne and his dynasty, were written on this last, and the papyrus was then entirely given up.

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* Some read "vicinæ," not "viginti."

† So called from Fannius, who had a manufactory at Rome for preparing paper. Plin. xiii. 12.

‡ *Vide* Plin. xiii. 12., where he makes other observations on the quality of paper.

Parchment, indeed, had been invented long before, and was used for writing, as early as the year 250 before our era, by Eumenes, king of Pergamus; who being desirous of collecting a library which should vie with that of Alexandria, and being prevented by the jealousy of the Ptolemies from obtaining a sufficient quantity of papyrus, had recourse to this substitute; and its invention at Pergamus claimed, and secured to it, the lasting name of Pergamena.* It was made of the skins of sheep and calves; but to the former the name of parchment is more correctly applied, as to the latter that of vellum.†

The monopoly of the papyrus in Egypt so increased the price of the commodity, that persons in humble life could not afford to purchase it for ordinary purposes; few documents, therefore, are met with written on papyrus, except funeral rituals, the sales of estates, and official papers, which were absolutely required: and so valuable was it, that they frequently obliterated the old writing, and inscribed another document on the same sheet.

For common purposes, pieces of broken pottery, stone, board, and leather were used; an order to visit some monument, a soldier's leave of absence, accounts, and various memoranda, were often written on the fragments of an earthenware vase; an artist sketched a picture, which he was about to introduce in a temple or a sepulchre, on a large flat slab of limestone, or on a wooden panel prepared with a thin coating of stucco: and even parts of funeral rituals were inscribed on square pieces of stone, on stuccoed cloth, or on leather. Sometimes leather rolls were substituted for papyri, and buried in the same manner with the deceased; they are of an early period, and probably adopted in consequence of the high price of the papyrus; but few have hitherto been found at Thebes.

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* Called also membrana by the Romans.

† From vellus, "a skin," or vitulinum, "of calf."

In the infancy of society, various materials were employed for writing, as stones, bricks, tiles, plates of bronze, lead and other metals, wooden tables *, the leaves and bark of trees, and the shoulder bones of animals. Wooden tablets covered with wax, were long in use among the Romans, as well as the papyrus †; and the inner bark of trees‡, and pieces of linen§, had been previously adopted by them.

Many Eastern people still write on the leaves of trees, or on wooden tablets, and *waraka* continues to signify, in Arabic, both "a *leaf*" and "paper."

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* These wooden tablets, which are covered with a glazed composition capable of receiving ink, were used by the Egyptians long after they had papyri, and they are still common in schools at Cairo in lieu of our slates. One is represented in wood-cut, No. 90. *fig.* 5.

† Whence the word "paper;" as in byblus, or biblus, originated the name bible or book.

‡ Called liber, whence the Latin name liber, "a book."

§ Liv. iv. 7. xiii. 20. "Linteis libris," about the year 440 B. C

The early Arabs committed their poetry and compositions to the shoulder-bones of sheep: they afterwards obtained the papyrus paper from Egypt, on which the poems called *Moallaqât* were written, in gold letters; and after their conquests in Asia and Africa, these people so speedily profited by, and improved the inventions of the nations they had subdued, that parchment was manufactured in Syria, Arabia, and Egypt, which in colour and delicacy might vie with our modern paper. It speedily superseded the use of the papyrus, and continued to be employed until the discovery of the method of making paper from cotton and silk, called *Carta bombycina*, which is proved by Montfaucon to have been known at least as early as A. D. 1100; and is supposed to have been invented about the beginning of the ninth century. Being introduced into Spain from Syria, it was denominated *Carta Damascena;* and some manuscripts on cotton paper are said to exist in the Escurial, written in the eleventh century.

It is a matter of doubt to what nation, and period, the invention of paper manufactured from linen ought to be ascribed. The Chinese were acquainted with the secret of making it from various vegetable substances long before it was known in Europe; the perfection to which they have carried this branch of art continues to excite our admiration; and "the librarian Casiri relates," according to Gibbon, "from credible testimony, that paper was first imported from China to Samarcand A. H. 30 (A.D. 652), and *invented*, or rather introduced, at Mecca A.H. 88 (A.D. 710)."*

It may, however, be questioned whether it was made from linen at that early period, and we have no positive proof of linen paper being known even by the Saracens, prior to the eleventh century. The Moors, as might be expected, soon introduced it into Spain, and the Escurial library is said to contain manuscripts written on this kind of paper, as old as the twelfth century.†

But paper of mixed cotton and linen, which was made at the same time, appears to have been in more general use; and linen paper continued to be rare in most European countries till the fifteenth century. That it was known in Germany as early as the year 1312, has been satisfactorily ascertained by existing documents, and a letter on linen paper, written from Germany to Hugh Despencer, about the year 1315, is preserved in the Chapter-house at Westminster; which, even to the water-mark, resembles that made at the present day.

It was not till the close of the sixteenth century that paper was manufactured in England. The first was merely of a coarse brown quality, very similar to that of the modern Arabs, whose skill in this, as in many arts and sciences, has been transferred to people once scarcely known to them, and then greatly their inferiors; and writing or printing paper was not made in London before 1690; France and Holland having, till that time, supplied us with an annual importation, to the amount of nearly 100,000 pounds.

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* Gibbon, vol. ix. c. 51. p. 379.

† Some doubt the existence of any MS. on linen paper before the year 1270; but an Arabic version of the Aphorisms of Hippocrates, in the Escurial, dates in the beginning of the 13th century.

TANNERS AND LEATHER CUTTERS.

The tanning and preparation of leather was also a branch of art, in which the Egyptians evinced considerable skill; the leather-cutters, as I have already observed, constituted one of the principal subdivisions of the third caste; and a district of the city was exclusively appropriated to them, in the Libyan part of Thebes.

Leather is little capable of resisting the action of damp, the salts of the earth, or excessive dryness, so that we cannot reasonably expect to find it sufficiently well preserved, to enable us to judge of its quality; but the fineness of that employed for making the straps, placed across the bodies of mummies, discovered at Thebes, and the beauty of the figures stamped upon them, satisfactorily prove the skill of "the leather cutters*," and the antiquity of embossing: some of these bearing the names of kings, who ruled Egypt about the period of the Exodus, or 3300 years ago.

Many of the occupations of their trade are portrayed on the painted walls of the tombs at Thebes. They made shoes, sandals, the coverings and seats of chairs or sofas, bow-cases, and most of the ornamental furniture of the chariot; harps were also adorned with coloured leather, and shields and numerous other things were covered with skin prepared in various ways. They also made skins for carrying water, wine, and other liquids; and the custom of coating them within with a resinous substance was the origin, as I have already observed*, of that acquired taste, which led the Egyptians to imitate the flavour it imparted to wine, even in their earthen amphoræ.

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* *Vide* Vol. II. p. 7.

Part of the process of curing the skins is introduced in the sculptures; and that of dyeing them is mentioned in the Bible†, being doubtless borrowed by the Jews from Egypt. In one instance, a man is represented dipping the hide into a vase, probably containing water, in which it was suffered to soak, preparatory to the lime being applied to remove the hair; a process very similar to that adopted at the present day in Egypt and other countries. The Arabs prefer the acrid juice of a plant growing in the desert, for the purpose, as its effect is still more rapid, and as it has the advantage of making the skin better and more durable.

This plant is the Periploca Secamone; its stalks contain a white milky juice, which exudes from it when bruised, and which is so acrid as to be highly injurious to the eye, or to the wounded skin. It supports itself by winding around every neighbouring shrub, and its not ungraceful stalks appear to have been occasionally used by the ancient Egyptians, for the same ornamental purpose as the ivy, in forming festoons. But there is no evidence of its having been employed by them in curing skins, though they seem to have been well acquainted with the properties of the plants which grew in the deserts, as well as in the valley of the Nile; and however we might be inclined to suppose that, in the sculptures of Thebes representing the occupations of curriers, they are pounding something of the kind for this purpose, the absence of every indication of the contents of the vase, or mortar, leaves it undecided if it be the *periploca*, or lime, salt, or other substance.

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* Vol. II. p. 158.

† Exod. xxv. 5. "*And rams' skins dyed red.*"

According to the Arabs, the method of preparing skins with the periploca, or *Ghulga*, is as follows: —"The skins are first put into flour and salt for three days, and are cleansed of all the fat and impurities of the inside. The stalks of the plant being pounded between large stones, are then put into water, applied to the inner side of the skin for one day, and the hair having fallen off, the skin is left to dry for two or three days, and the process is completed."

The mode of stretching or bending leather over a form is frequently represented at Thebes; and it is curious to observe, that the semicircular knife *, used by the ancient Egyptians between 3000 and 4000 years ago, is precisely similar to that of our modern curriers.

As in other trades, the tools they employed were neither numerous nor complex, and their means might sometimes appear inadequate, did we not see the beautiful work performed at the present day, in China, India, and other countries, where the implements are equally simple. The semicircular knife, a sort of chisel, the common awl, (specimens of which have been found at Thebes, similar to our own,) a stone for polishing the leather, the cutting table, the bending form, the horn, and a few other utensils, were all that occurred in the shop of the shoemaker, or the currier; and a prepared skin, the emblem of their trade, was suspended, together with ready-made shoes and other articles, to indicate their skill, and to invite a customer.

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* *Vide* wood-cut, No. 55. *fig. c*, Vol. I. p. 350.

The shops of an Egyptian town were probably similar to those of Cairo *, and other Eastern cities: which consist of a square room, open in front, with falling or sliding shutters, to close it at night; and the goods ranged in shelves, or suspended against the walls, are exposed to the view of those who pass. In front is generally a raised seat, where the owner of the shop and his customers sit, during the long process of concluding a bargain, previous to the sale and purchase of the smallest article; and here an idle lounger frequently passes whole hours, less intent on benefiting the shopkeeper, than in amusing himself with the busy scene of the passing crowd.

Among the many curious customs introduced in

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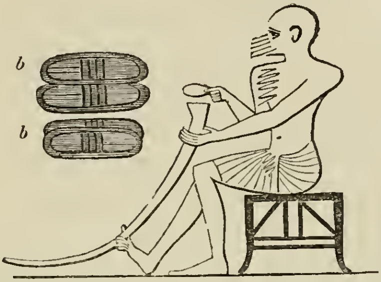
* *Vide* Lane's Modern Egyptians, vol. ii. p. 9. and 10., wood-cuts.

the paintings, and still retained in the East, is that of holding a strap of leather, or other substance, with the toes, which from their being always free, and unincumbered with tight shoes, retain their full power and pliability; and the singular, I may say, primitive, mode of tightening a thong with the teeth, while sewing a shoe, is also portrayed in the paintings of the time of the third Thothmes.



No. 360. Curricr holding a strap of leather with his toes, while cutting it. *Thebes.*
b b are straps tied up, and deposited in the shop.

It is probable that as at the present day, they ate in the open front of their shops, exposed to the view of every one who passed; and to this custom Herodotus may allude, when he says "the Egyptians eat in the street."*

In Eastern towns, no regal arms, or gilded inscription, proclaim the patronage† of "his Majesty," and no picture or description, affixed to the shop, announce the trade of the owner; being

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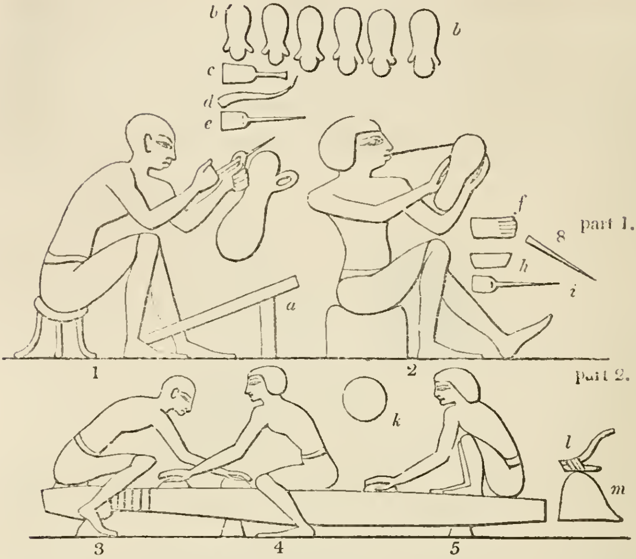
* Herodot. ii. 35.

† A Turk in London once observed, "How very changeable your king must be, if all the shops having royal arms have been successively tried by him."



No. 361. Part 1. Shoemakers.
Part 2. Men employed in polishing a column. *Thebes.*

Fig. 1. making a hole with an awl. 2. tightening a thong with his teeth.
b b sandals hanging up in the shop. *c* to *l* various tools.

thought sufficiently shown by the goods exposed for sale; but this does not prevent the inconsistency, perhaps profanation, of attaching a religious sentence, or the name of the Deity, to walls, which hourly witness an attempt to defraud the inexperienced customer. Nor is there any direct evidence that the ancient Egyptians affixed the name and trade of the owner of the shop, though the presence of hieroglyphics, denoting this last, together with the emblem which indicated it, may seem to argue in favour of the custom; and the absence of many individuals' names in the sculptures is readily accounted for by the fact, that these scenes refer to the occupation of the whole trade, and not to any particular person.

Of all people, we may suppose Egyptian shopkeepers most likely to display the patronage received from royalty; the name of a monarch being so often introduced in the most conspicuous manner on the coffins of private individuals, and in the paintings of the tombs; many of the scarabæi they wore presenting the name of a king; and the most ordinary devices being formed to resemble a royal oval. But whether or not they had this custom, or that of affixing the name and occupation of the tradesman, it is difficult to determine; and indeed in those cities where certain districts were set apart for particular trades, the latter distinction was evidently uncalled for, and superfluous.

The great consumption of leather in Egypt, and the various purposes to which skins *, both in the tanned and raw state, were applied, created a demand far greater than could be satisfied by the produce of the country: they therefore imported skins from foreign countries, and part of the tribute, levied on the conquered tribes of Asia and Africa, consisted of hides, and the skins of wild animals, as the leopard, fox, and others; which are frequently represented in the paintings of Thebes, laid before the throne of the Egyptian monarch, together with gold, silver, ivory, rare

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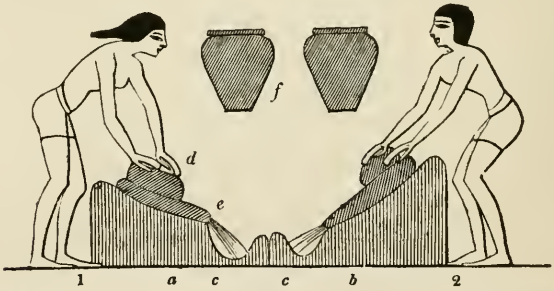
* Skins were considered of great value by many ancient people: the rewards in the games at Chemmis in Upper Egypt, were skins, cattle and cloaks, and we find the same custom among the Greeks. *Vide* Hom. Il. xxii. 159. Herodot. ii. 91.

woods, and the various productions* of each vanquished country.

For tanning they used the pods of the *Sont*, or Acacia (Acacia or Mimosa Nilotica), the *acanthus* of Strabo and other writers; which was cultivated in many parts of Egypt, being also prized for its timber, and gum; and it is probable that the bark and wood of the Rhus oxyocanthoïdes, a native of the desert, were employed for the same purpose.†

FULLERS.

Many persons, both men and women, were engaged in cleaning cloth, and stuffs of various kinds; and the occupations of the fuller form some of the numerous subjects of the sculptures. It is, however, probable that they were only a subdivision of



No. 362. Fullers. *Beni Hassan.*
a b inclined tables. *c c* the water running off into the trough below.

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* Some of these tributes put us in mind of the objects which came in Solomon's ships: "gold, and silver, ivory, and apes, and peacocks," 1 Kings, x. 22.; see also Athenæus (lib. v.), where he mentions the presents brought to Ptolemy Philadelphus.

† The Arabs also use the bark of the Acacia Sayal for tanning; it grows in the desert, but not in the valley of the Nile.

the dyers, whose skill in colouring cloth I have already noticed.

POTTERS.

A far more numerous class were the potters; and all the processes of mixing the clay, and of turning, baking, and polishing the vases, are represented in the tombs of Thebes and Beni Hassan.

They frequently kneeded the clay with their feet, and after it had been properly worked up, they formed it into a mass of convenient size with the hand, and placed it on the wheel *, which, to judge from that represented in the paintings, was of very simple construction, and turned with the hand. The various forms of the vases were made out by the finger during their revolution; the handles, if they had any, were afterwards affixed to them; and the devices and other ornamental parts were traced with a wooden or metal instrument, previous to their being baked. They were then suffered to dry, and for this purpose were placed on planks of wood; they were afterwards arranged with great care in trays, and carried, by means of the usual yoke, borne on men's shoulders, to the oven.

Many of the vases, bottles, and pans of ordinary quality were very similar to those made in Egypt at the present day, as we learn from the

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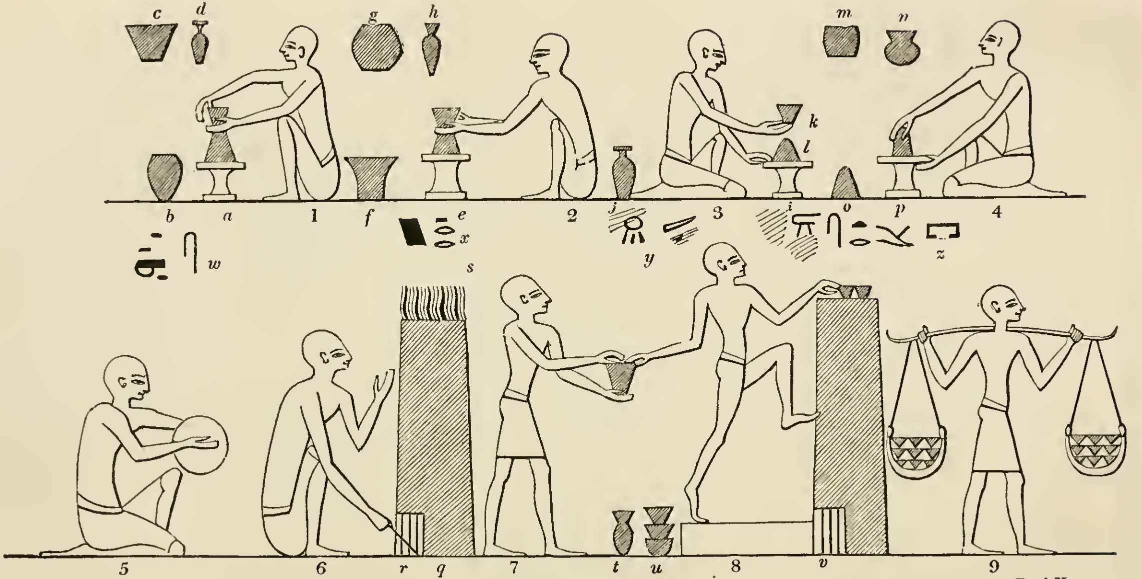
* Some supposed the potter's wheel to have been invented by Anacharsis, but, as Strabo observes, it was already known to Homer Strabo, vii. p. 209. Seneca Epist. 90. Plin. vii. 56.



No. 363. Potters' earthenware vases. *Beni Hassan.*

a e i p the wheels on which the clay was put. Fig. 1 forms the inside and lip of the cup as it turns on the wheel *a*. *b c d* are cups already made. Fig. 2 forms the outside of the cup, indenting it with the hand at the base, preparatory to its being taken off. Fig. 3 has just taken off the cup from the clay *l*. Fig. 4 puts on a fresh piece of clay. Fig. 5 forms a round slab of clay with his two hands. Fig. 6 stirs and prepares the oven *q*. At *s* is the fire which rises through the long narrow tube or chimney of the oven, upon the top of which the cups are placed to bake, as in *v*. Fig. 7 hands the cups to the baker 8. Fig. 9 carries away the baked cups from the oven.

representations in the paintings, and from those found in the tombs, or in the ruins of old towns; and judging from the number of Coptic words applied to the different kinds, their names were as varied as their forms. Coptos and its vicinity were always noted for this manufacture; the clays found there were peculiarly suited for porous vases to cool water; and their qualities are fully manifested, at the present day, in the *goolleh* or *bardak* bottles, of Qeneh.

That the forms of the modern *goollehs* are borrowed from those of an ancient time is evident, from the fragments found amidst the mounds, which mark the sites of ancient towns and villages, as well as from the many preserved entire; and a local tradition affirms that the modern manufacture is borrowed from, and has succeeded without interruption to, that of former days.

It is impossible to fix the period of the invention of the potter's wheel, and the assertion of Pliny, who attributes it to Corœbus the Athenian *, is not only disproved by probability, but by the positive fact that it was known at the earliest epoch of Egyptian history, of which the sculptures have been preserved, previous to the arrival of Joseph, and consequently long before the foundation of Athens.

But Pliny's chapter of inventions abounds with errors of this kind, and serves to show how commonly the Greeks adopted the discoveries of other nations, particularly of Egypt and Phœnicia, and claimed them as their own: even the art of cutting stones is attributed to Cadmus, of Thebes; and Thales of Miletus was said to have enlightened the Egyptians, under whom he had long been studying[*], by teaching them to measure the altitude of a pyramid, or other body, by its shadow[†], at the late period of 600 B. C. Though we may pardon, we must smile at, the vanity of the Greeks, who pretended to the merit of pointing out to their instructors a discovery[‡], of which men so skilful in astronomy and mathematics could not have been ignorant; but we must express our surprise at the simplicity of modern writers, who believe and repeat so improbable a story.

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* Plin. vii. 56.

The Egyptians displayed much taste in their gold, silver, porcelain, and glass vases, but when made of earthenware, for ordinary purposes, they were sometimes devoid of elegance, and scarcely superior to those of England, before the classic taste of Wedgewood substituted the graceful forms of Greek models, for the unseemly productions of our old potteries. Though the clay of Upper Egypt was particularly suited to porous bottles, it could not be obtained of a sufficiently fine quality for the manufacture of vases like those of Greece and Italy; in Egypt too, good taste did not extend to all classes, as in Greece; and vases used for fetching water from a well, or from the Nile, were frequently of a very ordinary kind, far inferior to those carried by the Athenian women to the fountain of Kallirhoë.*

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[*] The Greeks went to study in Egypt, as modern artists in Italy.

[†] Plin. xxxvi. 12. "When the shadow was equal to its height," at an angle of 45°.

[‡] On a par with this is their deriving foreign names from their own language, as Isis from the Greek word signifying "knowledge." — "Ελληνικον γαρ η Ισις εστι." Plut. de Is. s. 2.: and many others.

The Greeks, it is true, were indebted to Egypt for much useful knowledge, and for many early hints in art, but they speedily surpassed their instructors in taste, and improved on the information they had acquired; and in nothing, perhaps, is this more strikingly manifested than in the productions of the potter.

CARPENTERS AND CABINET-MAKERS.

Carpenters and cabinet-makers were a very numerous class of workmen: and their occupations generally form one of the most important subjects in the paintings which represent the Egyptian trades.

Egypt produced little wood; and with the exception of the date and dôm palms, the sycomore, tamarisk, and acacias, few trees of native growth afforded timber either for building, or for ornamental purposes.

The principal uses of the date and dôm trees I have already mentioned.†

For coffins, boxes, tables, doors, and other objects, which required large and thick planks, for idols and wooden statues, the sycomore was principally employed; and from the great quantity discovered in the tombs alone, it is evident that the tree was cultivated to a great extent. It had the additional recommendation of bearing a fruit, to which the Egyptians were very partial; and a religious prejudice claimed for it, and the Persea, the name and rank of sacred fruit trees.

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* In Mr. Rogers's choice collection is a vase, on which this subject is represented.

† In Vol. II. p. 177, 178.

The tamarisk was preferred for the handles of tools, wooden hoes, and other things requiring a hard and compact wood; and of the acacia were made the planks and masts of boats, the handles of offensive weapons of war, and various articles of furniture. Large groves of this tree were cultivated in many parts of Egypt; especially in the vicinity of Memphis and Abydus, where they still exist; and besides its timber, the acacia was highly valued for the pods it produced, so useful for tanning, and for the gum, which exudes from the trunk and branches, now known under the name of gum Arabic.* This tree is not less prized by the modern Egyptians, who have retained its name as well as its uses; *sont* being applied to this species of acacia, both in Arabic and the ancient Egyptian language.

Besides the *Sont*, or Acacia (Mimosa) Nilotica, the *Sellem*, *Sumr*, *Tulh*, *Fitneh*, *Lebbekh*, and other acacias, which grew in Egypt, were also adapted to various purposes; and some instances are met with of the wood of the *Eqleeq*, or Balanites Ægyptiaca, and of different desert trees having been used by the Egyptian carpenters.

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* Other acacias produce this gum. The *Tulh* has, *par excellence*, the specific title of gummifera. *Vide* Vol. II. p. 182.

For ornamental purposes, and sometimes even for coffins, doors, and boxes, foreign woods were employed; deal and cedar were imported from Syria; and part of the contributions, exacted from the conquered tribes of Ethiopia, and Asia, consisted in ebony and other rare woods, which were annually brought by the chiefs, deputed to present their country's tribute to the Egyptian monarchs.

Boxes, chairs, tables, sofas, and other pieces of furniture were frequently made of ebony, inlaid with ivory; sycomore and acacia were veneered with thin layers, or ornamented with carved devices, of rare wood, applied, or let into them; and a fondness for this display suggested to the Egyptians the art of painting common boards, to imitate foreign varieties, so generally adopted at the present day.

The colours were usually applied on a thin coating of stucco, laid smoothly upon the previously prepared wood, and the various knots and grains, painted upon this ground, indicated the quality of the wood they intended to counterfeit.

The usual tools * of the carpenter were the axe, adze, hand-saw, chisels of various kinds (which were struck with a wooden mallet), the drill, and two sorts of planes, (one resembling a chisel †, the other apparently of stone, acting as a rasp on the surface of the wood, which was afterwards polished by a smooth body, probably also of stone ‡;) and these

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* *Vide suprà*, woodcut, No. 151. Vol. II. c. 5. p. 181.

† *Vide* woodcut, No. 89. *fig.* 3. Vol. II. p. 42.

‡ *Vide* woodcut, No. 89. *fig.* 2. Vol. II. p. 42.

with the ruler*, plummet, and right angle†, a leather bag containing nails, the hone, and horn of oil, constituted the principal, and perhaps the only, implements he used.

Some of the furniture of their rooms, the work of the cabinet-maker, I have already noticed‡, and have observed§ the perfection to which they had arrived in the construction of the chairs and ottomans of their saloons; nor can I omit the mention of the art of dovetailing, already practised in the earliest Pharaonic ages, or the mode of applying two planks together in the same plane, by means of broad pins, or tongues, of hard wood. Of the former numerous instances occur, both in large and small objects, and no illustration of it is required; the latter is peculiar, and shows the great care taken to make every thing durable, which characterizes all the works of the Egyptians.

When two boards are joined together by our modern carpenters, they insert small round pins horizontally, into corresponding parts of the edges, and then apply them together, so as to form as it were a single piece; but the Egyptian carpenter was not content with this precaution, and having used flat pins for this purpose about two inches in breadth, he secured these again, after the boards had been applied to each other, by round pins or wooden nails, driven vertically through the boards, into each of the flat pins; and thus the possibility of the joint opening was effectually prevented, even should the glue, which was added as in our modern boxes, fail to hold them.

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* *Vide* woodcut, No. 364. *f.*

† *Vide* woodcut, No. 359. part ii. *fig. v.*; and No. 364. *e.*

‡ At the beginning of chapter vi.

§ Vol. II. ch. vi. p. 195.

After the wood had been reduced to a proper size by the saw, the adze was the principal tool employed for fashioning it; and from the precision with which even the smallest objects are worked with it at the present day, by the unskilful carpenters of modern Egypt, we may form some idea of its use in the hands of their expert predecessors; and we are less surprised to meet with it so frequently represented in the sculptures.

Many of them, together with saws and chisels, have been found at Thebes: the blades are all of bronze, the handles of the acacia or the tamarisk; and, which is very singular, the general mode of fastening the blade to the handle, appears to have been by thongs of hide. It is probable that some of those discovered in the tombs are only models, or unfinished specimens; and it may have been thought sufficient to show their external appearance, without the necessity of nailing them, beneath the thongs*; for those which they used were bound in the same manner, though I believe them to have been also secured with nails. Some, however, evidently belonged to the individuals in whose tombs they were buried, and like the chisels appear to have been used: for these last often bear the signs of having been beaten with the hammer or mallet.

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* It is probable that the stone and bronze celts found in Britain were fastened to their handles in the same manner. *Vide* wood-cut, No. 364. *c.* and No. 359. *u.* part 2.

The drill is frequently exhibited in the sculptures. Like all the other tools, it was of the earliest date, and precisely similar to that of modern Egypt, even to the nut of the dom * in which it turned, and the form of its bow with a leathern thong.

The chisel was employed for the same purposes, and in the same manner, as at the present day, and was struck with a wooden mallet, sometimes flat at the two ends, sometimes of circular or oval form; several of which last have been found at Thebes, and are preserved in our European museums. The handles of the chisel were of acacia, tamarisk, or other compact wood; the blades of bronze; and the form of the points varied in breadth, according to the work for which they were intended.

The hatchet was principally used by boat-builders, and those who made large pieces of framework; and trees were felled with the same instrument.

The mode of sawing timber was primitive and imperfect, owing to their not having adopted the double saw; and they were obliged to cut every piece of wood, however large, single-handed. In order, therefore, to divide a beam into planks, they placed it, if not of very great length, upright between two posts, firmly fixed in the ground, and

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* *Vide* woodcut, No. 359. part 2., and Vol. II. p. 180, 181.

being lashed to them with cords, or secured with pins, it was held as in a vice.*

Among the many occupations of the carpenter, that of veneering is noticed in the sculptures of Thebes, as early as the time of the third Thothmes, whom I suppose to be the Pharaoh of the Exodus; and the application of a piece of rare wood of a red colour, to a yellow plank of sycomore, or other ordinary kind, is clearly pointed out. And in order to show that the yellow wood is of inferior quality, the workman is represented to have fixed his adze carelessly in a block of the same colour, while engaged in applying them together. Near him are some of his tools, with a box or small chest, made of inlaid and veneered wood, of various hues; and in the same part of the shop are two other men, one of whom is employed in grinding something with a stone on a slab, and the other in spreading glue with a brush.

It might, perhaps, be conjectured that varnish was intended to be here represented; but the appearance of the pot on the fire, the piece of glue with its concave fracture, and the workman before mentioned, applying the two pieces of wood together, satisfactorily decide the question, and attest the invention of glue † 3300 years ago. This is not, however, the only proof of its use at an early

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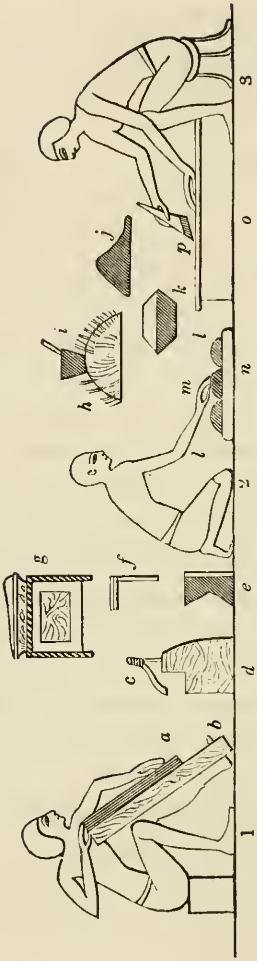
* *Vide* woodcut, No. 368. *a.*

† Professor Rosellini seems to think that the application of colour is here represented; but the presence of the pot, containing the brush, upon the fire, (Wood-cut, No. 364. 8.) will scarcely admit of this, though the figure (*fig.* 2.) grinding something on the slab, might appear to strengthen his conjecture. He has placed this subject with the



No. 364. Veneering and the use of glue. *Thebes.*

a a piece of dark wood applied to one of ordinary quality *b*. *c* adze, fixed into a block of wood of the same colour as *b*.
e a ruler: and *f* a right angle, similar to those used by our carpenters. *g* a box.
Fig. 2 is grinding something. *i* glue pot on the fire. *j* a piece of glue.
Fig. 3 applying the glue with a brush *p*.

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painters of Beni Hassan, but it is at Thebes. Pliny ascribes the invention of glue to Dædalus, as well as of the saw, the axe, the plumbline, and the auger. Plin. vii. 56.

period, and several wooden boxes have been found, in which glue was employed to fasten the joints.

Various boxes, shrines, articles of furniture, and other works of the cabinet-maker are frequently portrayed in the paintings of Thebes, many of which present not inelegant forms, and are beautifully made. I have already noticed* several of the smaller objects, as boxes for trinkets and ointment, wooden spoons, and the like; and have described† a curious substitute for a hinge, in some of those discovered at Thebes.

Many boxes had lids resembling the curved summit of a royal canopy‡, and were ornamented with the usual cornice§; others had a simple flat cover; and some few a pointed summit, resembling the shelving roof of a house.‖ This last kind of lid was divided into two parts, one of which alone opened, turning on two small pins at the base, on the principle of the doors of their houses and temples; and when necessary, the two knobs at the top¶ could be tied together and sealed, in the same manner as in that previously mentioned.**

When not veneered, or inlaid with rare wood, the sides and lid were painted, and those intended for the tombs, to be deposited there in honour of the deceased, had usually a funereal inscription, or a religious subject painted upon

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* In Vol. II. p. 355. to 362.

† In p. 361, 362.

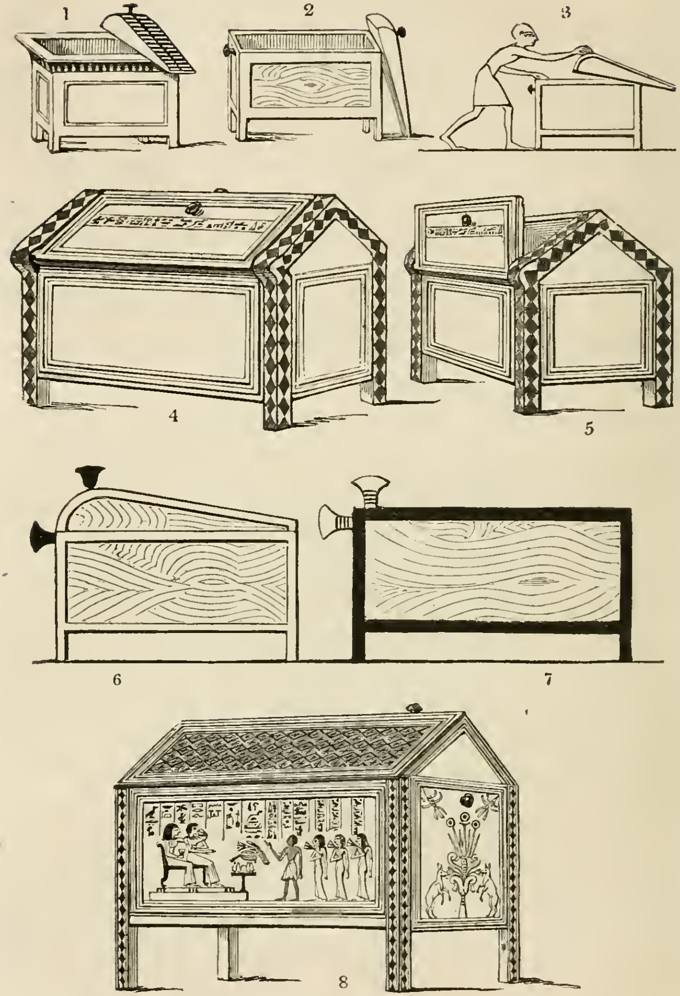
‡ Woodcut, No. 365. *figs.* 1, 2, 3, 6.

§ *Fig.* 1.

‖ Woodcut, No. 365. *figs.* 4. 8.

¶ *Fig.* 4.

** In Vol. II. p. 362.



No. 365. Different boxes.

Figs. 1. and 2. Mode of placing the lid when the box was opened.
3. Man opening a box, from a painting at Thebes.
4. and 5. A painted box of Mr. Salt's collection, showing how the lid opened.
6. and 7. Boxes from the paintings of Thebes.
8. Another box with a shelving lid, from a tomb at Thebes, in Mr. Salt's collection.

them, representing offerings presented by members of his family.*

Several boxes have been found at Thebes; and the British Museum possesses some formerly belonging to M. Salt, one of which is remarkable for the brilliancy of the colours imparted to the pieces of ivory with which it is inlaid. The box is of ebony; the ivory, painted red and blue, is let into the sides and edges, and the lid is ornamented in the same manner. There is in this a substitute for a hinge, similar to the one before mentioned, except that here the back of the cross bar, cut to a sharp edge along its whole extent, fits into a corresponding groove at the end of the box: the two knobs are fixed in their usual place at the top and front.

The lids of many boxes were made to slide in a groove, like our small colour boxes, as that given in a preceding wood-cut †; others fitted into the body, being cut away at the edges for this purpose; and some turned on a pin at the back, as I have shown in the long-handled boxes before mentioned.‡

In opening a large box they frequently pushed back the lid, and then either turned it sideways § and left it standing across the breadth of the box, or suffered it to go to the ground; but in those of still larger dimensions, it was removed altogether and laid upon the floor.

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[*] *Figs.* 4. and 8.

[†] Woodcut, No. 269. p. 361. Vol. II.

[‡] *Vide* woodcuts, Nos. 258. 259. and 263.

[§] Woodcut, No. 365. *figs.* 1, 2, 3.

With the carpenters may be mentioned the wheelwrights, the makers of coffins, and the coopers; and this subdivision of one class of artisans, showing a systematic partition of labour, is one of many proofs of the advancement of this civilised people.

I have already shown that the Egyptian chariot was of wood*, and have pointed out what portion of it was the province of the carpenter and the currier†; and having described the war chariot, and the curricle of the towns, it only remains to notice the travelling car, or light *plaustrum*, which was drawn by oxen.

Though so frequently used in Egypt, it is singular that one instance alone occurs of this kind of car, in a tomb I opened at Thebes in 1827; and this ought to show how wrong it is to infer the non-existence of a custom from its not being met with in the sculptures. The same remark also applies to the camel, which, in consequence of its not being found either in the paintings or hieroglyphics‡, is conjectured by some to have been unknown in Egypt at an early period; though, as I have already observed§, it is distinctly mentioned in the Bible among the presents given to Abraham by the king of Egypt.

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* Vol. I. p. 342. I have observed that the Egyptian chariot had only two wheels, and one instance is alone met with of a four wheeled carriage. Pliny says waggons with four wheels were an invention of the Phrygians, lib. vii. 56.

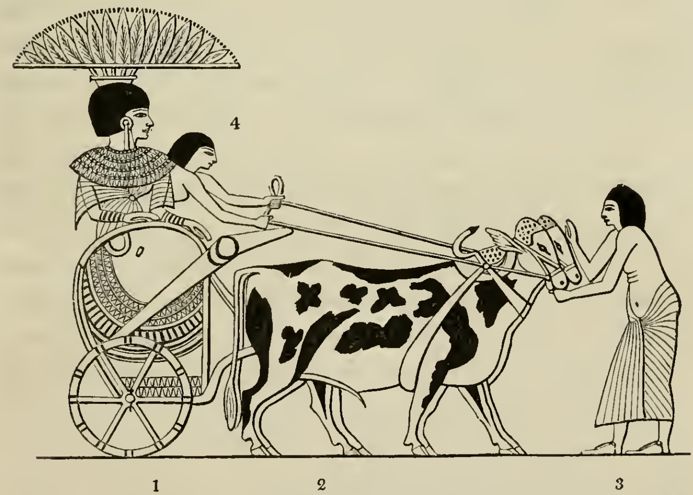
† Vol. I. p. 348.

‡ I have noticed an instance of it on a seal I found in Nubia, of uncertain date.

§ In chap. viii.

The plaustrum was very similar to the war chariot * and the curricle, but the sides appear to have been closed, and it was drawn by a pair of oxen instead of horses. The harness was much the same, and the wheels had six spokes. In a journey it was occasionally furnished with a sort of umbrella, fixed upon a rod rising from the centre, or back part of the car: the reins were the same as those used for horses, and apparently furnished with a bit; and besides the driver, a groom sometimes attended on foot, at the head of the animals, perhaps feeding them as they went.

The accompanying wood-cut represents an Ethiopian princess, who is on her journey through



No. 366. An Ethiopian princess travelling in a plaustrum, or car drawn by oxen. Over her is a sort of umbrella. *Thebes.*
3 an attendant. 4 the charioteer or driver.

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* It has been always a matter of surprise how the ancients could traverse hilly countries, where no roads were made, with so much facility, in chariots.

Upper Egypt to Thebes, where the court then resided; but whether it was on the occasion of her projected marriage with the king, the brother of the third Amunoph, or merely to present her homage to him, is uncertain. A large tribute is brought at the same time from her countrymen, the "Cush," or "Ethiopians;" which seems to show that it merely relates to a visit of ceremony from the queen or princess of that country; and the fact of the charioteer and some other of the attendants being Egyptians, suggests that the plaustrum was also provided from Egypt, as was the case when Pharaoh[*] sent for Jacob, and his family, to bring them to Egypt. The plaustra are called in Genesis[†] "waggons:" they were commonly used in Egypt for travelling; and Strabo performed the journey from Syene, to the spot, where he crossed the river to visit Philæ, in one of those carriages.[‡]

Besides the plaustrum, they had a sort of palanquin[§], and a canopy or frame-work, answering the purpose of a sedan chair, in which they sometimes sat or stood, in their open pleasure boats, or in situations where they wished to avoid the sun; and these were also the work of the cabinet-maker.

Certain persons were constantly employed in the towns of Egypt, as at the present day in Cairo and other places, to pound various substances in large stone mortars; and salt, seeds, and other things were probably taken, in the same manner, by a servant to these shops, whenever it was inconvenient to have it done in the house. The pestles they used, as well as the mortars themselves, were precisely similar to those of the modern Egyptians; and, their mode of pounding was the same; two men alternately raising ponderous metal pestles with both hands, and directing their falling point to the centre of the mortar; which is now generally made of a large piece of granite, or other hard stone, scooped out into a long narrow tube, to little more than half its depth. When the substance was well pounded, it was taken out, and passed through a sieve, and the larger particles were again returned to the mortar, until it was sufficiently and equally levigated; and this, and the whole process here represented, so strongly resemble the occupation of the public pounders at Cairo, that no one, who has been in the habit of walking in the streets of that town, can fail to

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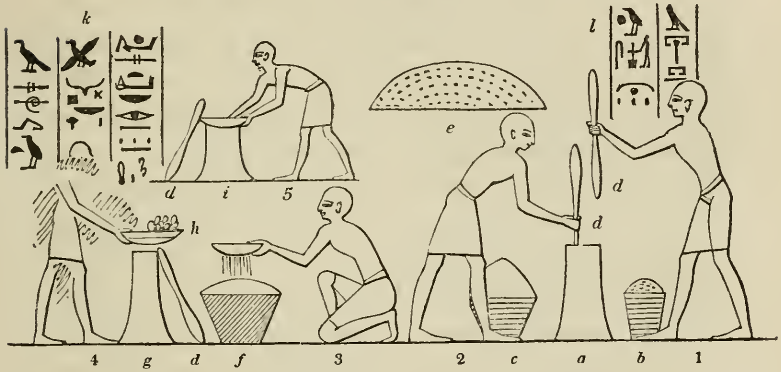
[*] Genes. xlv. 19.

[†] They are termed ageloot עגלות, *wheeled* carriages. Gen. loc. cit.

[‡] Strabo, lib. xvii. p. 562. ed. Cas. "*απηνη*."

[§] *Vide suprà*, Vol. II. p. 228. Woodcut, No. 174.



No. 367. Pounding various substances in stone mortars, with metal pestles. *Thebes.*
a g i mortars. *d d* pestles. Figs. 1 and 2 alternately raising and letting fall the pestles into the mortar. Fig. 3 and 4 sifting the substance after it is pounded; the coarser parts *h*, being returned into the mortar to be again pounded.

recognise the custom, or doubt of its having been handed down from the early Egyptians, and retained without the slightest alteration, to the present day.

In a country where water and other liquids were carried, or kept, in skins and earthenware jars, there was little necessity for the employment of wooden barrels, which too are little suited to a climate like the hot and arid Egypt; and modern experience there shows how ill adapted barrels are for such purposes, and how soon they fall to pieces, if neglected or left empty for a very short period. We cannot, therefore, expect that they should be in common use among the ancient Egyptians; and the skill of the cooper * was only required to make wooden measures for grain †, which were bound with hoops either of wood or metal, and resembled in principle those now used in Egypt for the same purpose; though in form they approached nearer to the small barrels ‡, or kegs, of modern Europe.

In an agricultural scene, painted at Beni Hassan, a small barrel is represented, placed upon a stand, apparently at the end of the field, which I at first supposed to have been intended to hold water for the use of the husbandmen, one of whom is approaching the spot; calling to mind the cup of wine presented to the ploughman on reaching the end of the furrow, mentioned by Homer, in

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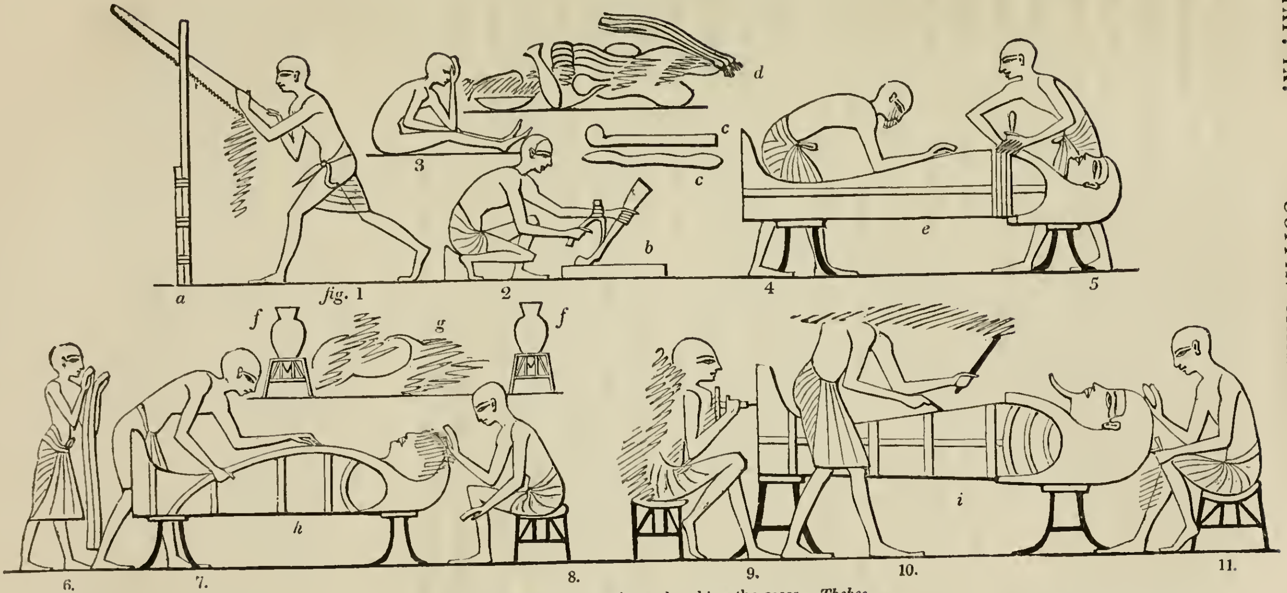
* The coopers of Cairo are generally Greeks.

† One of these is represented in woodcut, No. 90. fig. 2.

‡ In Europe, barrels were said by Pliny to have been invented by the Gauls, who inhabited the banks of the Po. Varro and Columella mention them in their time. They were pitched within.



No. 368.

Bandaging mummies and making the cases. *Thebes.*

Fig. 1 sawing wood.
c c wood ready for cutting.
6 brings the bandages.
2 cutting the leg of a chair, indicating the trade of the carpenter.
d onions and other provisions; which occur again at *g*, with vases *f f*.
9 using the drill.
3 a man fallen asleep.
4, 5, and 7, binding mummies.
8, 10, and 11 painting and polishing the case.

his description of the shield of Achilles*; but it is probable that in this instance, also, it is intended to indicate the measure of grain, with which the land was to be sown after the plough had passed.

A great number of persons were constantly employed in making coffins, as well as the numerous boxes, wooden figures, and other objects connected with funerals, who may be comprehended under the general head of carpenters; the undertakers, properly so called, being a different class of people, attached to and even forming part of the sacerdotal order, though of an inferior grade. Indeed the ceremonies of the dead were so numerous, and so many persons were engaged in performing the several duties connected with them, that no particular class of people can be said to have had the sole direction in these matters; and we find that the highest orders of priests officiated in some, and in others those of a very subordinate station. Thus the embalmers were held in the highest consideration, while those who cut open the body, when the intestines were removed, are said to have been treated with ignominy and contempt.†

BOAT-BUILDERS AND SHIPS.

The boat-builders may be divided into two separate and distinct classes; one of which formed a subdivision of the carpenters, the other of the basket-makers, or the weavers of rushes and osiers; another very numerous class of workmen.

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* Homer, Il. σ. 545.

† Diod. i. 91.

The boats made by these last were a sort of canoe or punt, used for fishing, and consisted merely of water plants or osiers, bound together with bands made of the stalks of the papyrus or cyperus.[*] They were very light, and some so small that they could easily be carried from one place to another[†]; and the Ethiopian boats, mentioned by Pliny[‡], which were taken out of the water, and carried on men's shoulders past the rapids of the cataracts, were probably of a similar kind.

Strabo[§], on the other hand, describes the boats at the cataracts of Syene passing the falls in perfect security, and exciting the surprise of the beholders, before whom the boatmen delighted in displaying their skill; and Celsius affirms that they were made of the papyrus.

Papyrus boats are frequently noticed by ancient writers. Plutarch describes Isis going, in search of the body of Osiris, "through the fenny country, in a bark made of the papyrus[‖]; whence it is supposed that persons using boats of this description[¶] are never attacked by crocodiles, out of fear and respect to the goddess;" and Moses is said to have been exposed in "an ark (or boat) of bulrushes, daubed with slime and with pitch."[**] From this last we derive additional proof that the body of such boats was composed of rushes, which, as I have observed, were bound together with the papyrus; and the mode of rendering them impervious to water is satisfactorily pointed out by the coating of pitch, with which they were covered. Nor can there be any doubt that pitch was known in Egypt at that time, since we find it on objects which have been preserved of the same early date; and the Hebrew word צפת (zift) is precisely the same as that used for pitch by the Arabs, to the present day.

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[*] Not the same species as that used for making paper. *Vide suprà*, p. 146.

[†] Achilles Tatius, lib. iv.

[‡] Plin. v. 9.

[§] Strabo, xvii. p. 562.

[‖] Plut. de Is. s. 18. "Εν βαριδι παπυρινῃ."

[¶] "Εν παπυρινοις σκαφεσι πλεοντας." Plut. loc. cit.

[**] Exod. ii. 3. The bulrush is called גמא; the paper reeds in Isaiah, xix. 7. are ערות.

Pliny mentions boats "woven of the papyrus*," the rind being made into sails, curtains, matting, ropes, and even into cloth; and observes elsewhere that the papyrus, the rush, and the reed were all used for making boats in Egypt.†

"Vessels of bulrushes" are again mentioned in Isaiah‡: Lucan alludes to the mode of binding or sewing them with bands of papyrus§; and Theophrastus|| notices boats made of the papyrus, and sails and ropes of the rind of the same plant. That small boats were made of these materials is very probable; and the sculptures of Thebes, Memphis, and other places abundantly show that they were employed as punts or canoes for fishing, in all parts of Egypt, during the inundation of the Nile; particularly in the lakes and canals of the Delta.

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* Plin. xiii. 11. "Ex ipso quidem papyro navigia texunt."

† Plin. vii. 16. and vi. 22.

‡ Isaiah, xviii. 2.

§ "Conseritur bibula Memphitis cymba papyro."
Lucan, iv. 136.

|| Theophr. iv. 9.

There was another kind, called by Strabo *pêcton*, in one of which he crossed the Nile to the Island of Philæ, " made of thongs, so as to resemble wicker-work*;" but it does not appear from his account whether it was formed of reeds bound together with thongs, or was like those made in Armenia, and used for going down the river to Babylon, which Herodotus describes, of osiers covered with hides.†

The Armenian boats were merely employed for transporting goods down the current of the Euphrates, and on reaching Babylon were broken up; the hides being put upon the asses which had been brought on board for this purpose, and the traders returning home by land. " They were round, in form of a shield, without either head or stern; the hollow part of the centre being filled with straw." " Some were large, others small, and the largest were capable of bearing 5000 talents weight." They were therefore very different from the boats, reported by the same historian to have been made in Egypt for transporting goods up the Nile, which he describes as being built in the form of ordinary boats, with a keel, and a mast and sails.

" The Egyptian boats of burden," he says, " are made of a thorn wood, very similar to the lotus of Cyrene, from which a tear exudes, called gum. Of this tree they cut planks measuring about two cubits, and having arranged them like bricks, they build the boat in the following manner:—They fasten the planks round firm long pegs, and, after this, stretch over the surface a series of girths, but without any ribs, and the whole is bound within by bands of papyrus. A single rudder is then put through the keel, and a mast of thorn-wood, and sails of the papyrus (rind) complete the rigging. These boats can only ascend the stream with a strong wind, unless they are towed by ropes from the shore; and when coming down the river, they are provided with a hurdle made of tamarisk*, sewed together with reeds, and a stone, about two talents weight, with a hole in the centre. The hurdle is fastened to the head of the boat, and allowed to float on the water; the stone is attached to the stern; so that the former, carried down the river by the rapidity of the stream, draws after it the *baris* (for such is the name of these vessels), and the latter, dragged behind, and sinking into the water, serves to direct its course. They have many of these boats; some of which carry several thousand talents weight." †

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* Strabo, xvii. p. 562.

† Herodot. i. 194. Those of the ancient Britons were made of wickerwork covered with hides. Cæs. B.C. i. 54.

That boats of the peculiar construction he here describes were really used in Egypt, is very probable; they may have been employed to carry goods from one town to another, and navigated in the manner he mentions: but we may be allowed to doubt their carrying several thousand talents, or many tons, weight; and we have the evidence of the paintings of Upper and Lower Egypt to show that the large boats of burthen were made of wooden planks, which men are seen cutting with saws and hatchets, and afterwards fastening together with nails and pins; and they were furnished with spacious cabins, like those of modern Egypt.

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* *Vide* Plin. xiii. 21. "Myricen, quam alii tamaricen vocant."

† Herod. ii. 96.

Pliny even goes farther than Herodotus, and speaks of papyrus vessels crossing the sea, and visiting the Isle of Taprobane * (Ceylon); unless, indeed, he alludes to their sails, made of the rind of that plant.

We are not, however, reduced to the necessity of crediting these statements of Pliny and Herodotus; and though punts and canoes of osiers, and papyrus, or reeds, may have been used on some occasions, as they still are †, on the Nile and the lakes of Egypt, we may be certain that the Egyptians had strong and well built vessels for the purposes of trade by sea, and for carrying merchandise, corn, and other heavy commodities on the Nile; and that, even if they had been very bold and skilful navigators, they would not have ventured to India ‡, nor have defeated the fleets of Phœnicia §, in their paper vessels.

The sails, when made of the rind of the papyrus, have been supposed similar to those of the

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* Plin. vi. 22. "Quia papyraceis navibus armamentisque Nili peteretur (Taprobane)."

† They are very rude, and much smaller than those of ancient times.

‡ Among the numerous productions of India met with in Egypt, which tend to prove an intercourse with that country, may be mentioned the pine apple, models of which are found in the tombs, of glazed pottery. One is in the possession of Sir Richard Westmacott.

§ In the reign of Apries. *Vide* Vol. I. p. 169.

Chinese, which fold up like our Venetian blinds; but there is only one boat represented in the paintings, which appears to have sails of this kind, though so many are introduced there; nor can we believe that a people, noted for their manufactures of linen and other cloths, would have preferred so imperfect a substitute as the rind of a plant, especially as they exported sail cloth to Phœnicia for that very purpose. *

Diodorus † and Herodotus ‡ both mention the fleet of long vessels, or ships of war, fitted out by Sesostris in the Arabian Gulf. The former states that they were four hundred in number, and that Sesostris was the *first* Egyptian monarch, who *built* similar vessels; but Herodotus merely says he was the first who passed into the ocean; and the necessity of previously having ships of war to protect the trade and coasts of Egypt, disproves his statement, and suggests that they were used at the early period, when the port of Philoteras traded with the Arabian, and, perhaps, even the Indian shore. §

Pliny supposes that ships were first built by Danaus ||, and taken from Egypt to Greece when he migrated to that country; rafts only having been previously known; and he states that some attributed their invention to the Trojans and Mysians, who crossed the Hellespont, in their wars with Thrace. The sculptures, however, of ancient Egypt

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* *Vide* Ezekiel, xxvii. 7. In the lamentation of Tyre, "Fine linen, with broidered work from Egypt, was that which thou spreadest forth to be thy sail."

† Diodor. i. 55.

‡ Herodot. ii. 102.

§ *Vide* Vol. I. p. 46.

|| Plin. vii. 56.

still remain to decide the question, and their dates being now ascertained, we are enabled to form our own opinions on the subject, without the necessity of trusting to the uncertain accounts of ancient writers. From the sculptures of the eighteenth dynasty, it appears that the same kind of boats for carrying heavy burdens were then employed in Egypt, as in the later days of Psamaticus and Amasis; they are found at Eilethyas and Beni Hassan of the age of Amosis*, and of Osirtasen the contemporary of Joseph; and in the tombs near the pyramids they again occur, of an epoch previous to the sixteenth dynasty, and the reign of Osirtasen.

The ingenious Champollion conjectured that some hieroglyphics at Eilethyas proved † the inmate of one of the tombs there, called—"Ahmosis, the son of Obschne," to have been "chief of the mariners, or rather of the pilots," who "entered the naval career in the time of King Ahmosis," and "accompanied that monarch, when he went up by water to Ethiopia, to impose tribute upon it," and "commanded ships under Thoutmosis the First." If this be true, it confirms what I have before stated, respecting the early existence of an Egyptian fleet; and whatever improvement may have been afterwards made in the ships of war, fitted out by Sesostris and other monarchs, in the Arabian Gulf and Mediterranean*, we have sufficient evidence from the paintings of the tombs at Eilethyas, that in the time of the same Amosis, the ordinary travelling boats of the Nile were of a construction far superior to those mentioned by Herodotus.

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* These two names are both written Ames in the hieroglyphics, but I use them thus by way of distinction, and in accordance with Manetho. *Vide* Vol. I. p. 47. and 150.

† Champollion's twelfth letter from Egypt. *Vide* Lit. Gazette, p. 617.

To have had frequent occasion to introduce the name of Champollion, to whom we are so deeply indebted, without paying a just tribute to his talents, is to me a reproach, which I cannot suffer to remain unremoved. I do not wish to enter into the question respecting the discovery of the proper mode of reading the hieroglyphics: suffice it to say that Dr. Young gave the first idea and proof of their alphabetic force, which was even for some time after doubted by Champollion. And that the merit of originality in this point is due to our distinguished countryman I can bear a satisfactory testimony, having, with my much regretted friend Sir William Gell, as early as the summer of 1821, so far profited by Dr. Young's opinions on the subject, as to be enabled to suggest the supposed value of two or three other characters, besides those he had already ascertained; our taking this view of the question being solely in consequence of his discovery *that they were the representatives of letters.* But it remained for the genius of Champollion to kindle the spark thus obtained into a flame, and to display by its light, the path which led to a clear insight into the subject, to perfect the discovery, and to lay down certain rules, applicable in individual as well as in general cases; and in justice to him be it confessed, that if our knowledge of hieroglyphics were confined to the limited extent to which it was carried by Dr. Young, we should have no regular system to guide us, in the interpretation of them, and should know little more than the alphabetic value of a few letters, without the means of affixing a positive construction to a single sentence on any Egyptian monument.

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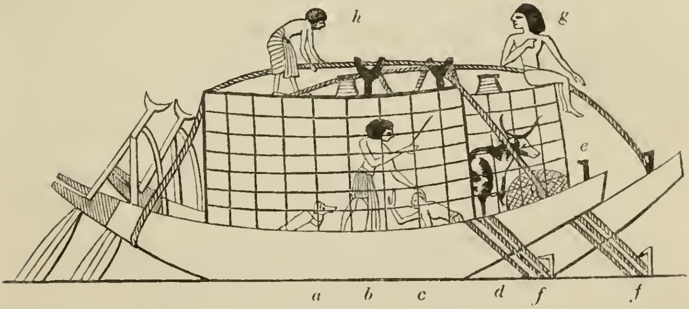
* Herodot. ii. 159. and 102. Diodor. i. 68.

Had Champollion been disposed to give more credit to the value and originality of Dr. Young's researches, and to admit that the real discovery of the *key* to the hieroglyphics, which in his dexterous hand proved so useful in unlocking those treasures, was the result of his labours, he would unquestionably have increased his own reputation, without making any sacrifice. In this, as in the case of Mr. Burton's trilinguar (or rather trigrammatic) stone, and in a few other points, he may have shown a want of ingenuousness: all have their faults and vanities; but this is not a reason that the memory of one so respectable as Champollion should be aspersed, or due praise refused him; and we cannot forgive the ungenerous conduct of those who, from private pique, summon up and misapply talents, to pervert truth; denying the merit of labours which, every one acquainted with the subject, knows to have been crowned with unexampled and wonderful success. This is not an era, when we could believe men capable of lending themselves to the unworthy office of maligning one no longer living to defend himself, and one, who present, or absent, merits and possesses the respect and admiration of every unprejudiced person. Yet have some been found, in more than one country, prompted to this malicious act by personal enmity, envy of his superior talents and success, or by that affectation of scepticism, which, while it endeavours to conceal ignorance, often hopes to acquire credit for discernment and superior knowledge.

When the subject of hieroglyphics becomes better understood, and the world is capable of judging how much we owe to him, the wonderful ingenuity of Champollion will be appreciated, and the greatest praise we can bestow on him is confidently to pronounce, that time will do justice to his merits, and experience prove the truth of what inexperience now calls in question.

In the mean time, his last labours, when in Egypt, are not lost to us; and though we deeply regret that his life was not spared to complete the task he so ably commenced, it is satisfactory to find his powerful aid still benefits and guides us, by the publication of his grammar of hieroglyphics; and some of the valuable materials collected by him and Professor Rosellini are already before us. It is indeed fortunate, that one, so talented and so persevering as the Italian Professor, should have presided over that part of the scientific expedition sent to Egypt by the Tuscan government; and those who follow in the field of hieroglyphic enquiry will re-echo the praises we so willingly bestow on the liberality of governments, whose patronage is given to such a worthy object.

The construction of the various boats used on the Nile varied, according to the purposes for which they were intended. The punts or canoes were either pushed with a pole, or propelled with a paddle*; they had no mast, nor even rudder; and many of the small boats, intended merely for rowing, were unprovided with a mast or sails. They were also destitute of the raised cabin, common in large sailing boats, and the rowers appear to have been seated on the flat deck, which covered the interior from the head to the stern, pushing instead of pulling the oars, contrary to the usual custom in boats of larger dimensions. The absence of a mast did not altogether depend on the size of the boat, since those belonging to fishermen, which were very small, were often furnished with a sail, besides three or four oars†; and some large boats, intended for carrying cattle and heavy goods, were sometimes without a mast.



No. 369. Boats for carrying cattle and goods on the Nile. *Thebes.*

a b two boats, fastened to the bank by the ropes and pegs *f f*; in the cabin of one, a man inflicts the bastinado on a boatman. He is one of the stewards of the estate, and is accompanied by his dog. In the other boat is a cow, and a net of hay or chopped straw *e*, precisely the same as the *shenf* now used in Egypt.

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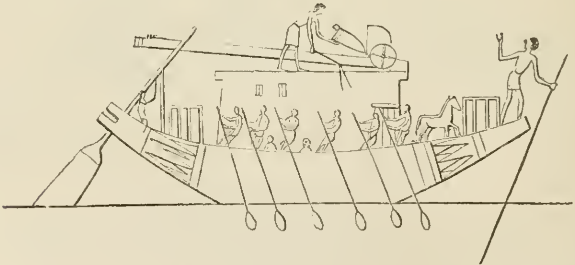
* *Vide* Contest of boatmen, woodcut, No. 313. *fig.* 1.

† *Vide* Fishing scene, woodcut, No. 333. part 1. *a*.

In going up the Nile, they used the sail, whenever the wind was favourable, occasionally rowing, in those parts where the sinuosities of the river brought it too much upon the bows; for it is probable that, like the modern Egyptians, they did not tack in navigating the river; and when the wind was contrary, or during a calm, they generally employed the tow-line, which was pulled by men on shore.

After they had reached the southernmost point of their journey up the stream, the sail was no longer considered necessary; and the mast and yards being taken down, were laid over the top of the cabin, or on a short temporary mast, with a forked summit; precisely in the same way, and with the same view, as at the present day, on board the *cangias*, and other masted rowing boats of Egypt. For as the wind generally blows from the N. W., it seldom happens that the sail can be used in going down the Nile, and in a strong wind the mast and rigging are so great an incumbrance, that the boat is unable to make any way against it, with oars.



No. 370.—A boat with the mast and sail taken down, having a chariot and horses on board. *Eilethyas.*

The heavy boats of burden, which from their great size cannot be propelled by oars, are suffered to retain their masts and sails, and float down the river sideways at the rate of the stream, advantage being taken of the wind whenever the bends of the river allow of it; and the large *germs*, used for carrying corn during the inundation, are only employed when the water is very deep, and are laid up the rest of the year, and covered with matting from the sun. These, therefore, form exceptions to the ordinary boats of the Nile, and may be considered similar to some represented in the sculptures of Alabastron, which are fastened to the shore by several large ropes, and are shown from the size of their cabins, the large awning in front for covering the goods they carried, and the absence of oars, to have been of unusual dimensions.

In a boat given in the preceding woodcut from a tomb at Eilethyas, an error has frequently been made respecting the wheel upon the top of the cabin, which some have supposed to be connected with the sail*, in order to enable the yard to traverse with greater facility, or for some such purpose; but on a careful examination of the subject it proves to be part of a chariot, too much defaced by time to be easily perceived at first sight, and the horses belonging to it are seen below in front of the cabin. This circumstance not only shows the comforts with which the Egyptian grandees travelled, when going from one part of the country to the other, but affords additional proof of the size of the boats used upon the Nile.

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* The other boat represented in this subject has the sail up, and the same chariot on board. It is, indeed, the same boat, with and without the sail.

Large boats had generally one, small pleasure boats two rudders, at the stern. The former traversed upon a beam, between two projecting heads, a short pillar or mast supporting it and acting as the centre on which it moved; the latter were nearly the same in principle except that they turned on a bar, or in a ring, by which they were suspended to the gunnel at either side; and in both instances the steersman directed them, by means of a rope fastened to the upper extremity. The rudders consisted of a long broad blade and still longer handle, evidently made in imitation of the oars, by which they originally steered their boats, before they had so far improved them as to adopt a fixed rudder; and in order to facilitate its motion upon the mast or pillar, and to avoid the friction of the wood, a piece of bull's hide was introduced, as is the custom in the modern boats, between the mast and yard.

The oars were a long round wooden shaft, to which a flat board, of oval or circular form, was fastened, and it is remarkable that the same oar is used to this day on the Ganges, and in the Arabian Gulf. They turned either on toll-pins, or in rings, fastened to the gunnel of the boat, and the rowers sat on the deck, on benches, or on low seats, or stood or knelt to the oar, sometimes pushing it forwards, sometimes, and indeed more generally, pulling it, as is the modern custom in Egypt, and most other countries.

At the head of the boat a man* usually stood, with a long pole* in his hand, by which he tried at intervals the depth of the water, lest they should run upon any of the numerous sandbanks with which the river abounds, and which, from their often changing at the time of the inundation, could not always be known to the most skilful pilot; a precaution still adopted by the modern boatmen of the Nile.

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* The "Custos et tutela proræ." Ovid, Met. iii. 617.

That the ancient Egyptian boats were built with ribs, like those of the present day, is sufficiently proved by the rude models discovered in the tombs of Thebes. It is probable that they had very little keel, in order to enable them to avoid the sandbanks, and to facilitate their removal from them when they struck; and indeed if we may judge from the models, they appear to have been flat-bottomed. The boats now used on the Nile have a very small keel, particularly at the centre, where it is concave; so that when the head strikes, they put to the helm, and the hollow part clears the bank; except in those cases where the impetus is too great, or the first warning is neglected.

The sails of the ancient boats appear to have been always square, with a yard above and below; in which they differ from those now adopted in Egypt. The only modern boats with square sails are a sort of lighter, employed for conveying stones from the quarries to Cairo and other places; and these have only a yard at the top. All other boats have *latine* or triangular-shaped sails, which, in order to catch the wind when the Nile is low, are made of immense size: for unless they reach above its lofty banks they are often prevented from benefiting by a side wind at that season of the year; but the number of accidents which occur are a great objection to the use of such disproportionate sails.

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* The *middree* of the Arabs, the contus, or pertica, of the Romans.

The cabins of the Egyptian boats were lofty and spacious; they did not, however, always extend over the whole breadth of the boat, as in the modern cangias, but merely occupied the centre; the rowers sitting on either side, generally on a bench or stool. They were made of wood, with a door in front, or sometimes on one side, and they were painted within and without with numerous devices, in brilliant and lively colours.* The same custom continued to the latest times, long after the conquest of the country by the Romans; and when the Arabs invaded Egypt in 638, under Amer the general of the Caliph Omer, one of the objects which struck them with surprise was the gay appearance of the painted boats of the Nile.

The lotus was one of their favourite devices, as on their furniture, the ceilings of rooms, and other places, and it was very common on the blade of the rudder, where it was frequently repeated at both ends, together with the eye. But the place considered peculiarly suited to the latter emblem was the head or bow of the boat; and the custom is still retained in some countries to the present day. In India it is very generally adopted; and we even see the small barks which ply in the harbour of Malta bearing the eye on their bows, in the same manner as the boats of ancient Egypt.

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* *Vide* plate 16.—Conf. Plin. 357.

They do not appear to have had any thing like the *aplustre* of the Romans, an ornament fixed to the stern, and sometimes to the prow, on which a staff was erected, bearing a ribbon or flag; but streamers were occasionally attached to the pole of the rudder, and a standard was erected near the head of the vessel.[*] The latter was generally a sacred animal[†]; a sphinx, or some emblem connected with religion or royalty, like those belonging to the infantry before described[‡]; and sometimes the top of the mast bore a shrine or feathers, the symbol of the deity to whose protection they committed themselves during their voyage.

There is a striking resemblance, in some points, between the boats of the ancient Egyptians and those of India; and the form of the stern, the principle and construction of the rudder, the cabins, the square sail, the copper eye on each side of the head, the line of small squares at the side, like false windows[§], and the shape of the oars of boats used on the Ganges, forcibly call to mind those of the Nile, represented in the paintings of the Theban tombs.

The head and stern of the Egyptian pleasure-boats were usually ornamented with, or terminated in the shape of, a flower richly painted; in the boats of burden they were destitute of ornament, and simply rounded off; and I have met with two only in which there was any resemblance to a beak. But as this was in Nile boats, and at the stern*, it could not have been intended for an offensive purpose. Nor are the ships of war, represented at Medeenet Haboo, furnished with beaks.

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[*] *Vide* plate 16. boats with coloured sails.

[†] Perhaps answering to the *παρασημον* of the Greeks, though not at the prow itself.

[‡] Vol. I. p. 294.

[§] *Vide* woodcut, No. 373.

At the head, a forecastle frequently projected above the deck, which was assigned to the man who held the fathoming pole, above mentioned, and at the stern another of similar form was sometimes added, where the steersman sat; reminding us of the poop of Roman vessels.† They were very generally adopted, and found of great service in the war gallies‡; the archers profiting by these commanding positions to rake the enemy's decks, as they bore down upon a hostile galley, and to disable the rowers. In the pleasure-boats they served also as hatches for going below deck, and were similar to what the Nile boatmen now call the *hôn*.

The gallies or ships of war differed in their construction from the boats of the Nile. They were less raised at the head and stern, and on each side, throughout the whole length of the vessel, a wooden bulwark, rising considerably above the gunnel, sheltered the rowers, who sat behind it, from the missiles of the enemy; the handles of the oars passing through an aperture at the lower part. Besides the archers in the raised poop and forecastle, a body of slingers was stationed in the tops, where they could with more facility manage that weapon, and employ it with effect on the enemy.

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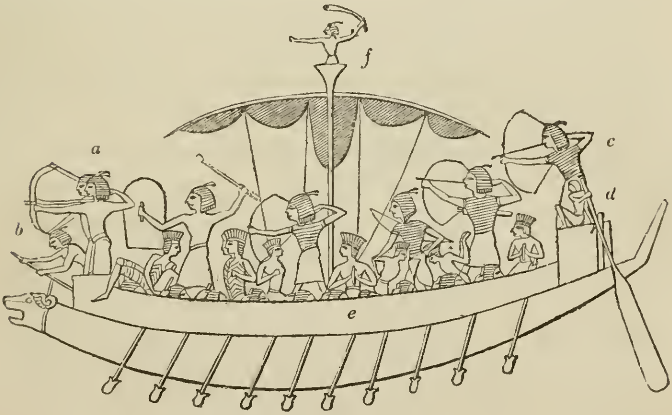
* The remainder of the boat is destroyed, I cannot therefore say if the head was of the same form.

† "Ipse gubernator puppi Palinurus ab alta." Virg. Æn. v. 12. and 175.

‡ In the Roman gallies the fighting men were placed in a similar manner at the head and stern, Liv. xxx. 43. and xxxvi. 42., in towers, called propugnacula. Hor. Epod. i. 2.

On advancing to engage a hostile fleet, the sail was used till they came within a certain distance, when the signal or order being given to clear for action, it was reefed by means of ropes running in pullies, or loops, upon the yard. The ends of these ropes, which were usually four in number, dividing the sail as it rose into five folds, descended and were attached to the lower part of the mast, so as to be readily worked, when the sail required to be pulled up, at a moment's notice, either in a squall of wind or on any other occasion; and in this respect, and in the absence of a lower yard, the sail of the war galley greatly differed from that of the



No. 371. War galley; the sail being pulled up during the action. *Thebes.*

a raised forecastle, in which the archers were posted. *c* another post for the archers, and the pilot *d*. *e* a bulwark, to protect the rowers. *f* slingers, in the top.

boats on the Nile. Having prepared for the attack, the rowers, whose strength had been hitherto reserved, plied their oars; the head was directed towards an enemy's vessel, and showers of missiles were thrown from the forecastle and tops as they advanced. It was of great importance to strike their opponent on the side; and when the steersman, by a skilful manœuvre, could succeed in this, the shock was so great that they sank it, or obtained a considerable advantage by crippling the oars; and greater facility was given for boarding in this part, being distant from the fighting men, and occupied only by the rowers.

The small* Egyptian gallies do not appear, as already observed, to have been furnished with a beak, like those of the Romans, which being of brass sharply pointed, and sometimes below the water's surface, did great damage to an enemy's vessel, and exposed it to the danger of sinking, by forcing in the planks of the bottom; but a lion's head fixed to the prow, supplied its place, and being probably covered with metal, was capable of doing great execution, when the galley was impelled by the force of 16 or 20 oars.† This head occasionally varied in form, and perhaps served to indicate the rank of the commander, the name of the vessel, or the deity under whose protection they sailed, like the sign (*παρασημον*,) of the Greeks, Romans, and other people‡; unless indeed the lion was always chosen for their war gallies, and the ram, oryx, and others, confined to the boats connected with the service of religion.

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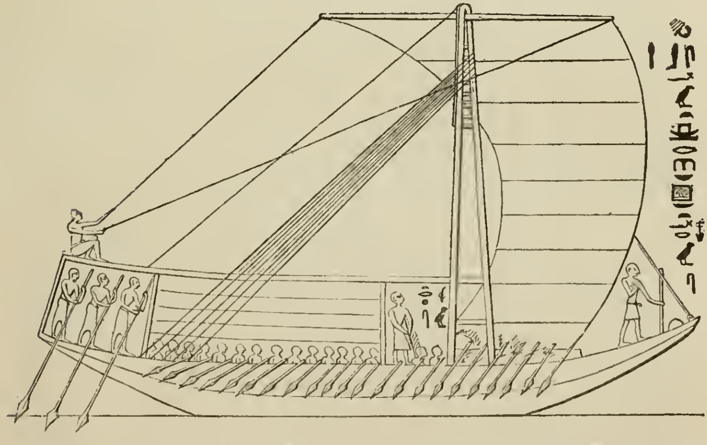
* We have no representation of their large ships of war.

† They are represented with eight and ten oars on each side.

‡ Herodot. viii. 88. Act. Apost. xxviii. 11. Virgil (Æn. v. 116.), shows that ships had names given them, like our own at the present day, as the Chimæra, the Centaur, and others.

Some of the boats on the Nile were furnished with 44 oars, 22 being represented on one side; which, allowing for the steerage and prow, would require their total length to be about 120 feet. They were furnished, like all the others, with one large square sail; but the mast, instead of being single, was made of two limbs of equal length, sufficiently open at the top to admit the yard between them, and secured by several strong stays, one of which extended to the prow, and others to the steerage of the boat. Over the top of the mast a light rope was passed, probably intended for furling the sail, which last, from the horizontal lines represented upon it, appears to have been like



No. 372. — Large boat with sail, apparently made of the papyrus, a double mast, and many rowers. *In a tomb at Kom Ahmar, above Minich.*

those of the Chinese; and this, as already observed, is the only instance of a sail which has the appearance of being made of the papyrus.

At the extremity of the yard were braces, which being held by a man seated in the steerage, or upon the cabin, served to turn the sail to the right and left; they were common to all boats, as with the Romans, by whom they were called *pedes*[*], and managed in the same manner. The mode of steering the boat is also different from that usually described in the Egyptian paintings; and instead of a rudder in the centre of the stern, or at either side, it is furnished with three on the same side: all which peculiarities suffice to show that it was of unusual construction, perhaps of a very early period, and afterwards abandoned as cumbrous and imperfect. The only satisfactory point it indicates is the mode of arranging the oars, while not required during a favourable wind. It is evident that they were drawn up, through the ring or band in which they turned, and they were probably held in that position by a thong or loop passing over the handle[†], which the artist has failed to insert, or which is no longer seen, in consequence of the imperfect preservation of the painting.

There is no instance of a boat with a rudder at both ends, said to have been used by some ancient nations[‡], nor do we find them provided with more than one mast, and a single sail; in which respect they resembled those of the Greeks, at the period of the Trojan war.* Sometimes the single rudder, instead of traversing in a groove, or hollow space, merely rested on the exterior of the curved stern, and was suspended by a rope, or bands; but that imperfect method was confined to boats used in religious ceremonies on the river, an instance of which may be seen in the model preserved at Berlin, as well as in the paintings of Thebes.

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[*] Whence "facere pedem," to adjust the sail.

[†] *Vide* also woodcut, No. 343. fishing scene.

[‡] Tacit. de Mor. Germ. 44. and Ann. ii. 6.

This model, which is very curious, shows the position of the rowers, the arrangement of the mast and yard when taken down, the place of the pegs and mallet for fastening the boat to the shore, and of the landing plank; which were always kept in readiness, as at the present day, in the bows, and were under the surveillance of the man stationed at the prow to report and fathom the depth of the water; it also shows that the boat was decked, and that the cabin did not extend over the whole breadth; which is in perfect accordance with the sculptures, representing the pleasure boats of the Nile, and those of their funeral ceremonies.

In some boats of burden, the cabin, or raised magazine, was broader, reaching probably from one side to the other, and sufficiently large to contain cattle, horses, and numerous stores.†

Unlike the modern Egyptians, they paid great attention to the cleanliness of their boats, the cabins and decks being frequently washed and swept, and we find the Theban artists thought it of sufficient importance to be indicated in the sculptures.

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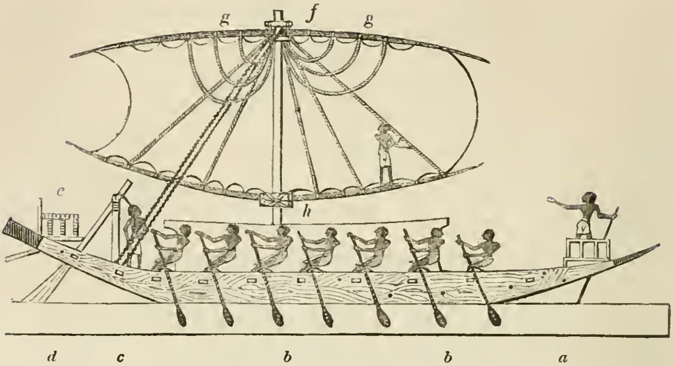
* Homer, Od. v. 254. "*Εν δ'ιστον ποιει, και επικριον αρμενον αυτῳ.*"

† *Vide* wood-cut, No. 369.



No. 373. — Boat of the Nile; showing how the sail was fastened to the yards, and the nature of the rigging. *Thebes.*

Herodotus states that the mast was made of the acanthus (Acacia, or Mimosa Nilotica); but as the trunk and limbs of this tree are not sufficiently long or straight, it is evident that the historian was misinformed; and we may readily conceive that they preferred the fir, with which they were well acquainted*, great quantity of the wood being annually imported into Egypt from Syria. The planks, the ribs, and the keel were of the acacia, which from its resisting the effect of water for a length of time, was found, says Pliny†, well adapted for this purpose, as is fully proved by modern experience. The foot of the mast was let into a strong beam, which crossed the whole breadth of the boat; it was supported by and lashed to a knee, rising to a considerable height before it;

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* *Vide* Plin. xvi. 40.

† Plin. xiii. 9. "Spina nigra . . . quoniam incorrupta etiam in aquis durat, ob id utilissima navium costis." In lib. xvi. 40. he mentions cedar being used in Syria and Egypt for building ships, when fir wood was scarce.

and the many stout stays, fastened at the head, stern, and sides, sufficiently secured it, and compensated for the great pressure of the heavy yards and sail it carried.

I have observed that in ships of war, the yard was allowed to remain aloft after the sail had been reefed; but in the boats of the Nile, which had a yard at the top and bottom of the sail, as soon as it was furled, they lowered the upper yard, and in this position it remained until they again prepared for their departure. To loosen the sail from the lower yard must have been a tedious operation, if it was bound to it with the many lacings represented in some of the paintings; but in these cases it may have been folded up between the two yards, as soon as the upper one was lowered; the whole being lashed together by an outer rope.

It is uncertain whether they used pullies for raising and lowering the yards, or if the halliards merely passed through a smooth dead-sheave-hole at the top of the mast. The yards were evidently of very great size, and of two separate pieces, scarfed or joined together at the middle*, sometimes supported by five or six lifts, and so firmly secured that men could stand or sit upon them, while engaged in arranging the sail; and from the upper yard were suspended several ropes, resembling the *horses* of our square-rigged ships †, and perhaps intended for the same purpose when they furled the sail. The Egyptians, however, were not ignorant of the pulley; and I am inclined to believe they introduced it in the rigging of their boats: though owing to their imperfect style of drawing, it is not indicated; and one has actually been found in Egypt, and is now in the museum of Leyden. It is, however, of uncertain date, and was apparently intended for drawing water from a well. The sides are of *athul* or tamarisk wood*, the roller of fir; and the rope, of *leef* or fibres of the date tree, which belonged to it, was found at the same time.

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* *Vide* wood-cut, No. 373. *h*.

† *Vide* wood-cut, No. 373. *gg*.

Many of the sails were painted with rich colours †, or embroidered with fanciful devices, representing the phœnix, flowers, and various emblems; some were adorned with cheques, and others were striped, like those of the present day. This kind of cloth, of embroidered linen, appears to have been made in Egypt expressly for sails, and was bought by the Tyrians ‡ for that purpose; but its use was confined to the pleasure boats of the grandees, or of the king himself, ordinary sails being white; and the ship, says Pliny §, in which Antony and Cleopatra went to the battle of Actium, was distinguished from the rest of the fleet by its purple sails, which were the peculiar privilege of the admiral's vessel. The same writer states that the custom of dyeing the sails of ships was first adopted in the fleet of Alexander the

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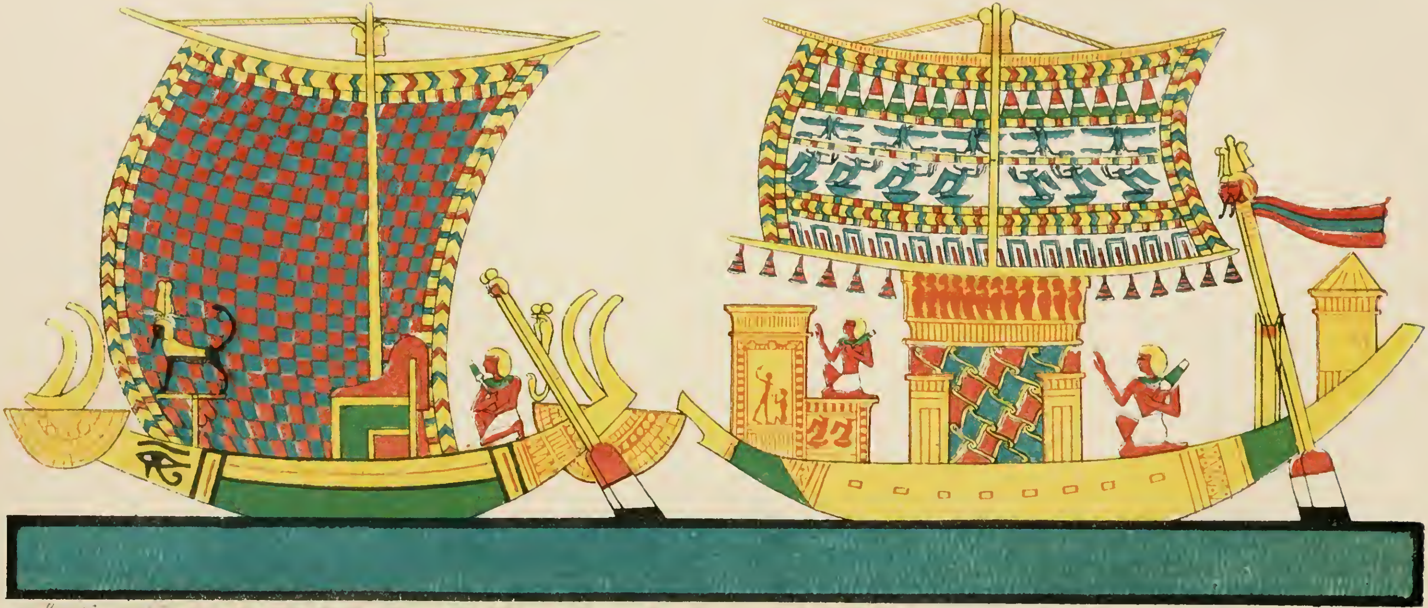
* Tamarix orientalis.

† The sails of our own vessels in the time of Edward the Fourth, had coats of arms emblazoned upon them.

‡ Ezek. xxvii. 7. *Vide suprà*, p. 185., note 3.

§ Plin. xix. 1.



Humphreys

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BOATS WITH COLOURED SAILS, FROM THE TOMB OF REMESES III AT THEBES

Great, when navigating the Indus; but that it was practised long before, in Egypt, is evident from the paintings at Thebes, which represent sails richly ornamented with various colours, in the time of the third Remeses, nine hundred years previous to the age of Alexander.

The devices with which they were painted or embroidered depended on fancy, and the same monarch had ships with sails of different patterns. Of all these the phœnix appears to have been the most appropriate emblem, if, as is stated by Horapollo*, it indicated "the return of a traveller, who had long been absent from his country;" and it is probable that the boats used in sacred festivals upon the Nile were decorated with appropriate symbols, according to the nature of the ceremony, or the deity in whose service they were engaged. The edges of the sail were furnished with a strong hem or border, also neatly coloured, serving to strengthen it, and prevent an injury, and a light rope was generally sewed round it for the same purpose.

Some of the Egyptian vessels appear to have been of very great size.† Diodorus‡ mentions one of cedar wood, dedicated by Sesostris to the god of Thebes, 280 cubits, or 420 feet, long; another built by Caligula in Egypt, to transport one of the obelisks to Rome, carried 120,000 *modii* (pecks) of lentils as ballast§; and Ptolemy Philopator built one of forty benches of oars, which was 420 feet long, and 72 from the keel to the top of the poop, and carried four hundred sailors, besides four thousand rowers, and near three thousand soldiers.*

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* Horapoll. Hierogl. lib. i. c. 35.

† Conf. Hor. 1 Epod. i. 1. referring to the large ships of M. Antony, "alta navium . . . . propugnacula."

‡ Diodor. i. 57.

§ Plin. xvi. 40.; and xxxvi. 9.

NAVIGATION.

Of the origin of navigation no satisfactory conjecture can be offered, nor do we know to what nation to ascribe the merit of having conferred so important a benefit on mankind.

It is evident that the first steps were slow and gradual, and that the earliest attempts to construct vessels on the sea were rude and imperfect.

Ships of burden were originally mere rafts, made of the trunks of trees bound together, over which planks were fastened; which Pliny states to have been first used on the Red Sea†; but he is wrong in limiting the era of ship-building to the age of Danaus, and in supposing that rafts alone were employed until that period. Rafts were adopted, even to carry goods, long after the invention of ships, as they still are for some purposes on rivers and other inland waters; but boats, made of hollow trees and various materials, covered with hides or pitch, were also of very early date, and to these may be ascribed the origin of planked vessels. Improvement followed improvement, and in proportion as civilisation advanced, the inventive genius of man was called forth to push on an invention, so essential to those communities, where the advantages of commerce were understood, and numerous causes contributed to the origin of navigation, and the construction of vessels for traversing the sea.

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* Plut. Life of Demetrius. Pliny (vii. 56.) says it had fifty benches; and he mentions another of Ptolemy Philadelphus with forty.

† Plin. vii. 57. The Phœnicians were supposed to have come from the Red Sea, and to have settled on the coast of the Mediterranean. Herodot. i. 1. *Vide* Strabo, lib. i. p. 29.

Curiosity may have prompted those who lived on the coast to visit a neighbouring island; or the desire of conquest, to cross a narrow channel, to invade a foreign land, as Pliny observes in the case of the Trojans; but it is more probable that the occupation of the fisherman was the principal cause and promoter of this useful art: those who at first employed themselves merely on a sheltered river, venturing at length in the same boat upon the sea, and having acquired confidence from habit, extending their excursions along the coast; for it was long, before the art of navigation was so far improved, that the boldest mariner * dared to trust his vessel out of sight of land.

The first sea voyages, of which we have any direct notice, are those undertaken by the Egyptians at the early period when they led colonies into Greece; but the people to whom the art of navigation was most indebted, who excelled all others in nautical skill, and who carried the spirit of ad-

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* "Illi robur et æs triplex
Circa pectus erat, qui fragilem truci
Commisit pelago ratem
Primus, nec timuit præcipitem Africum
Decertantem Aquilonibus."
Hor. i. Od. iii. 9

venture far beyond any contemporary nation, were the Phœnicians; and those bold navigators even visited the coast of Britain, in quest of tin.

The fleets of Sesostris and the third Remeses certainly date at a very remote age, and some Phœnician sailors, sent by Neco * on a voyage of discovery, to ascertain the form of the African continent, actually doubled the Cape of Good Hope, about twenty-one centuries before the time of Bartholomew Diaz, and Vasco de Gama; but it was not till the discovery of the compass † that navigation became perfected, and the uncertain method of ascertaining the course by the stars ‡ gave place to the more accurate calculations of modern times.

After the fall of Tyre, and the building of Alexandria, Egypt became famous as a commercial country, and the emporium of the East; the riches of India, brought to Berenice, Myos-Hormos, and other ports on the Red Sea, passed through it, to be distributed over various parts of the Roman empire; and it continued to benefit by these advantages, until a new route was opened to India by the Portuguese, round the Cape of Good Hope.

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* *Vide* Vol. I. p. 158. Pliny mentions others who performed this voyage, lib. ii. 67.

† The Chinese used the compass at a very early period; and Marco Polo probably introduced it from China, about 1290 A.D., 12 years before Gioia of Amalfi, its supposed inventor. The loadstone (Heraclius lapis) was different from the Magnetis of Theophrastus, (on stones, 73.) as is explained by Hesychius, "Μαγνητις λιθος . . . *αργυρω εμφερης ουσα, ἡ δε Ἡρακλεωτις τον σιδηρον επισταται.*" Plutarch says the loadstone was mentioned by Manetho, de Is. s. 62.

‡ *Vide* Hom. Odyss. v. 272.

THE USE OF TIN AND OTHER METALS.

It is difficult to explain how, at that early period, so great a value came to be attached to tin, that the Phœnicians should have thought it worth while to undertake a voyage of such a length, and attended with so much risk, in order to obtain it; even allowing that a high price was paid for this commodity in Egypt, and other countries, where the different branches of metallurgy were carried to great perfection. It was mixed with other metals, particularly copper, which was hardened by an alloy of tin; and was employed, according to Homer, for the raised work on the exterior of shields [*], as in that of Achilles; for making greaves [†]; and binding various parts of defensive armour [‡]; as well as for household [§] and ornamental purposes; and, which is very remarkable, the word *kassitéros*, used by the poet to designate it, is the same as the Arabic name *kasdeer* [‖], by which the metal is still known in the East, being probably derived from the ancient Phœnician.

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[*] Hom. Il. xviii. 565. 574.

[†] Hom. Il. xviii. 612. "*Τευξε δε οι κνημιδας εανου κασσιτεροιο.*"

[‡] Hom. Il. xviii. 474. "*Χαλκον δ'εν πυρι βαλλεν απειρεα, κασσιτερον τε*
Και χρυσον τιμηντα, και αργυρον."

[§] No copper vessels have yet been found, even of Roman time, washed with tin, and few only with silver. Several gilt have been met with in Egypt, Greece, and Italy. Dioscorides mentions tinned boilers, "*εις λεϐητα κεκασσιτερωμενον βαλλε,*" lib. i. c. 38. He is supposed to have been physician to Antony and Cleopatra, or to have lived in the time of Nero. *Vide* also Plin. xxxiv. 17., on the tinning of copper vessels.

[‖] It will be observed that the accent in the Greek is over the same part of the word, *κασσιτέρος*. It is, I trust, unnecessary to observe that the ancient Greeks pronounced according to accent, as they now do in Greece, or to point out the origin of those marks.

We have no means of ascertaining the exact period when the Phœnicians first visited our coasts in search of tin; some have supposed about the year 400 or 450 before our era: but that this metal was employed many ages previously, is shown from the bronze vessels[*] and implements discovered at Thebes, and other parts of Egypt. It cannot, however, be inferred that the mines of Britain were known at that remote period, since the intercourse with India may have furnished the Egyptians with tin; and the Phœnicians probably obtained it from Spain[†] and India, long before they visited those distant coasts, and discovered the richness of our productive mines.[‡] Ezekiel, indeed, expressly says that the Tyrians received tin, as well as other metals, from Tarshish; which, whether it was situated, as some suppose, in Arabia[§] or on the Indian coast, traded in the productions of the latter country; and the lamentation[||] of the prophet on the fall of Tyre, though written as late as the year 588 before our era, relates to a commercial intercourse with that place, which had been established, and continued to exist, from a much earlier period.[¶]

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[*] Bronze is made of copper and tin; brass of copper and zinc.

[†] The mines of Spain and Portugal produce very little tin. There are some in Saxony and Bohemia. Those of Malacca are very productive.

[‡] In the year 1791 about 3000 tons of tin were taken from the mines of Cornwall, of which 2200 tons were sold in the European market for 72*l.* each, the remaining 800 being sent to India and China at 62*l.* a ton. Univ. Dict. of Arts and Sciences, Tin.

[§] Bruce supposed it to be Mokha.

[||] Ezek. xxvii. 12. "Tarshish was thy merchant by reason of the multitude of all kind of riches; with silver, iron, *tin*, and lead, they traded in thy fairs."

[¶] The gold of Ophir being mentioned by Job is one of many proofs of an early intercourse with India. Job xxii. 24.

It is probable that the Phœnicians supplied the Egyptians with this article, even before it was brought from Spain and Britain. The commercial intercourse of the two nations dated at a most remote epoch[*]; the produce and coasts of Arabia and India appear to have been known to the Phœnicians, long before any other people; and some have even supposed that they migrated from the Red Sea to the shores of Syria.[†]

That the productions of India already came to Egypt, at the early period of Joseph's arrival in that country, is evident from the spices which the Ishmaelites[‡] were carrying to sell there; and the amethysts, hæmatite[§], lapis lazzuli, and other objects[‖] found at Thebes of the time of the third Thothmes, and succeeding Pharaohs, argue that the intercourse was constantly kept up.

The first mention of tin, though not the earliest proof of its use, is in connection with the spoils taken by the Israelites from the people of Midian, in the year 1452 B.C., where they are commanded by Moses to purify "the gold and the silver, the brass, the *iron*, the *tin*, and the lead," by passing it through the fire.[¶] Its combination with other metals is noticed by Isaiah, in the year 760 before our era, who alludes to it as an alloy mixed with a more valuable substance*; and Ezekiel† shows that it was used for this purpose in connection with silver.

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[*] Herodot. i. 1.

[†] Herodot. loc. cit.

[‡] Gen. xxxvii. 25.

[§] This kind of iron ore is found also in Spain, Italy, Germany, and England.

[‖] I might, perhaps, add siderite.

[¶] Numb. xxxi. 22. Tin in Hebrew is called bedeel, בדיל.

Strabo, Diodorus, Pliny and other writers, mention certain islands discovered by the Phœnicians, which, from the quantity of tin they produced, obtained the name *Cassiterides;* and are supposed to have been the cluster now known as the Scilly Isles, and to have included part of the coast of Cornwall itself.‡ The secret of their discovery was carefully concealed, says Strabo§, from all other persons, and the Phœnician vessels continued to sail from Gades (Cadiz) in quest of this commodity, without its being known from whence they obtained it; though many endeavours were made by the Romans at a subsequent period to ascertain the secret, and to share the benefits of this lucrative trade.

So anxious, indeed, were the Phœnicians to retain their monopoly, that on one occasion when a Roman vessel pursued a trader bound to the spot, the latter purposely steered his vessel on a shoal, preferring to suffer shipwreck, provided he involved his pursuers in the same fate, to the disclosure of his country's secret. His artifice succeeded; the Roman crew, exposed to additional risk in consequence of being unprepared for the sudden catastrophe, were all lost with their foundered vessel, and the Phœnician, having the good fortune to escape with his life, was rewarded from the public treasury for his devotion, and the sacrifice he had made.[*]

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* Isaiah, i. 25. "I will . . . . purge away thy dross, and take away all thy tin."

† Ezek. xxii. 18. 20. "They are brass, and tin, and iron, and lead, in the midst of the furnace; they are even the dross of silver."

‡ Beckmann and Borlase are also of this opinion.

§ Strabo, lib. iii. ad fin. p. 121.

Pliny mentions a report of "white lead," or tin, being brought from certain islands of the Atlantic; yet he treats it as a "fable," and proceeds to state that it was found in Lusitania and Gallicia, and was the same metal[†] known to the Greeks in the days of Homer by the name cassiteron[‡]; but Diodorus and Strabo, after noticing the tin of Spain and the Cassiterides, affirm that it was also brought to Massilia (Marseilles) from the coast of Britain.[§]

Spain, in early times, was to the Phœnicians what America, at a later period, was to the Spaniards; and no one can read the accounts of the immense wealth derived from the mines of that country, in the writings of Diodorus and other authors, without being struck by the relative situation of the Phœnicians and ancient Spaniards, and the followers of Cortes or Pizarro and the inhabitants of Mexico or Peru.

"The whole of Spain," says Strabo, "abounds with mines . . . and in no country are gold, silver, copper, and iron in such abundance or of such good quality: even the rivers and torrents bring down gold in their beds, and some is found in the sand:" and the fanciful assertion of Posidonius, regarding the richness of the country in precious metals, surpassed the phantoms created in the minds of the conquerors of America.

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[*] Strabo, loc. cit.

[†] Beckmann, in his History of Inventions (vol. iv. p. 10. 20.), doubts the Stannum of Pliny, or the Cassiteron of Homer, being tin. Pliny's account of Stannum is obscure.

[‡] Plin. xxxv. 16. He places the Cassiterides off the coast of Celtiberia, lib. iv. 22.

[§] Strabo, lib. iii. p. 101. and Diodor. v. 38.

The Phœnicians purchased gold, silver, tin, and other metals from the inhabitants of Spain and the Cassiterides, by giving in exchange earthenware vessels, oil, salt, bronze instruments, and other objects of little value, in the same manner as the Spaniards on their arrival at Hispaniola; and such was the abundance of silver, that after loading their ships with full cargoes, they stripped the lead from their anchors, and substituted the same weight of silver.*

METALLURGY.

A strong evidence of the skill of the Egyptians in working metals, and of the early advancement they made in this art, is derived from their success in the management of different alloys; which, as M. Goguet† observes‡, is further argued from the casting of the golden calf, and still more from Moses being able to burn the metal and reduce it to powder; a secret which he could only have learnt in Egypt. It is said in Exodus*, that "Moses took the calf which they had made, and burnt it in the fire, and ground it to powder, and strewed it upon the water, and made the children of Israel drink of it;" an operation which, according to the French *savant*, "is known by all who work in metals to be very difficult."

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* Diodor. lib. v. 35.

† Goguet, Origine des Lois, des Arts, et des Sciences, tome ii. liv. 2. ch. iv. p. 145.

‡ Goguet is wrong in supposing that the smelting of tin is one of the most difficult operations in metallurgy, tome ii. liv. ii. ch. iv. p. 146. Tin melts more readily than lead: the latter requires a heat of 550° Fahr., the former only of 420°.

"Commentators' heads," he adds, "have been much perplexed to explain how Moses burnt and reduced the gold to powder. Many have offered vain and improbable conjectures, but an experienced chemist has removed every difficulty upon the subject, and has suggested this simple process. In the place of tartaric acid, which we employ, the Hebrew legislator used natron, which is common in the East. What follows, respecting his making the Israelites drink this powder, proves that he was perfectly acquainted with the whole effect of the operation. He wished to increase the punishment of their disobedience, and nothing could have been more suitable; for gold reduced and made into a draught, in the manner I have mentioned, has a most disagreeable taste."

GOLD WORKING — GILDING.

The use of gold, for jewellery and various articles of luxury, dates from the most remote ages. Pharaoh having "arrayed"† Joseph "in vestures of fine linen, put a gold chain about his neck;" and the jewels of silver and gold borrowed from

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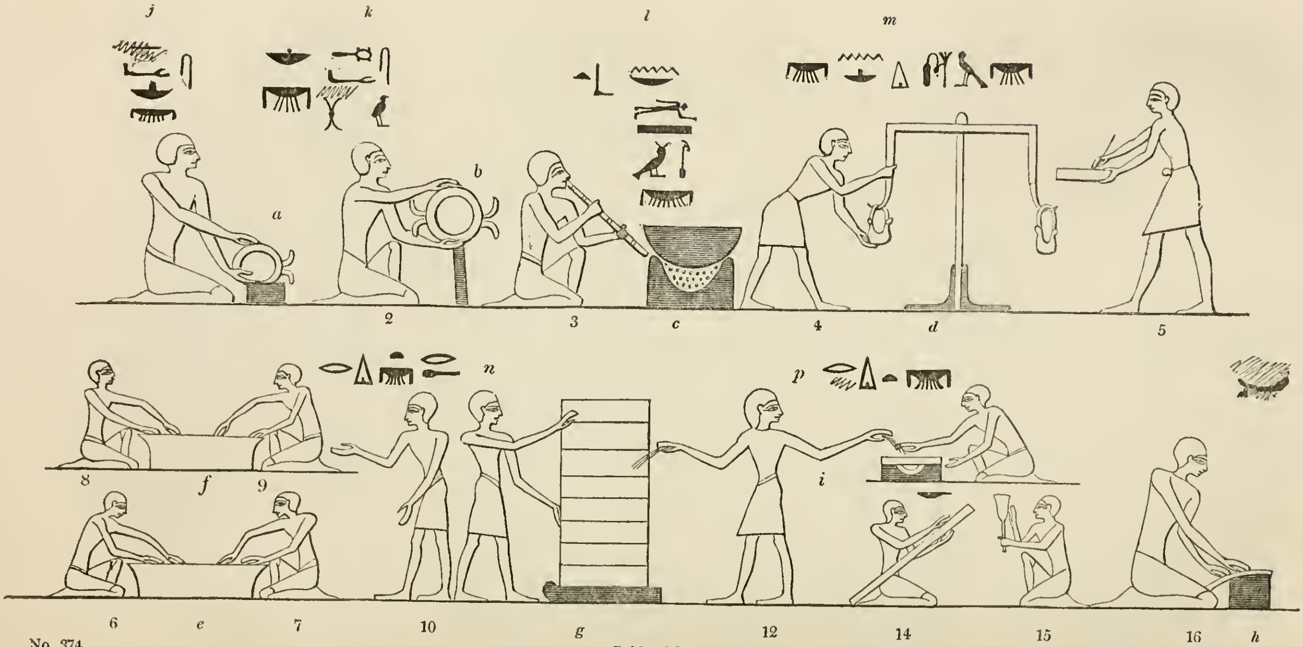
* Exod. xxxii. 20.

† This custom, of conferring rank by presenting a suitable dress (or *kisweh*), still continues in the East.



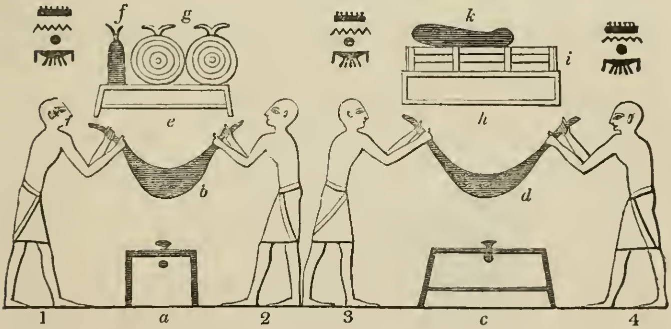
No. 374. Goldsmiths. *Beni Hassan.*

Fig. 1, 2, making jewellery. 3 blowing the fire for melting the gold. 4 weighing the gold. 5 clerk or scribe. 6, 7, 8, 9, washing gold. 10 superintendent. The remaining part relates to the preparation of the metal before it was worked.

the Egyptians by the Israelites* at the time of their leaving Egypt, (out of which the golden calf was afterwards made†,) suffice to prove the great quantity of precious metals wrought at that time into female ornaments. It is not from the Scriptures alone that the skill of the Egyptian goldsmiths may be inferred; the sculptures of Thebes and Beni Hassan afford their additional testimony; and the numerous gold and silver vases, inlaid work, and jewellery, represented in common use, show the great advancement they had already made, at a remote period, in this branch of art.

The engraving of gold, the mode of casting it, and inlaying it with stones, were evidently known at the same time; they are mentioned in the Bible‡, and numerous specimens of this kind of work have been found in Egypt.

The origin of the sign signifying gold has been



No. 374 *a*. Goldsmiths. *Thebes.*
f g are articles of jewellery. The hieroglyphics read "goldsmith," or "worker in gold."

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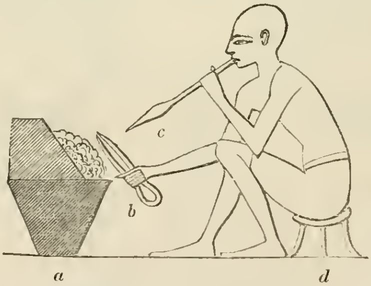
* Exod. iii. 22. and xii. 35.

† Exod. xxxii. 2, 3.

‡ Exod. xxxii. 4. Aaron "fashioned it with a graving tool, after he had made it a molten calf." On engraving and setting stones, *vide* Exod. xxviii. 9. and 11.

happily explained by the ingenious Champollion; as the *bowl** in which the metal was washed, the *cloth* through which it was strained, and the *dropping of the water*, united into one character, at once indicative of the process and the metal.

Much cannot, of course, be expected from the objects found in the excavated tombs, to illustrate the means employed in smelting the ore, or to disclose any of the secrets they possessed in metallurgy; and little is given in the paintings, beyond the use of the blow-pipe, the forceps†, and their mode of concentrating heat, by raising cheeks of metal round three sides of the fire, in which the crucibles were placed. Of the latter, indeed, there is no indication in these subjects, unless it be in the preceding woodcut‡; but their use is readily suggested, and some which have been found in Egypt are preserved in the museum of Berlin. They are nearly five inches in diameter at the mouth, and about the same in depth, and present



No. 375. Blowpipe, and small fireplace with cheeks to confine and reflect the heat. *Thebes.*

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* Or the frame over which the cloth was laid. *Vide* woodcut, No. 374. *a. fig. a.*

† Bronze forceps, tongs, and tweezers have been found, retaining their spring perfectly.

‡ Woodcut, No. 374. *c.*

the ordinary form and appearance of those used at the present day.

From the mention [*] of earrings and bracelets, and jewels of silver and gold, in the days of Abraham, it is evident that in Asia, as well as in Egypt, the art of metallurgy was known at a very remote period; and workmen of the same countries are noticed by Homer [†] as excelling in the manufacture of arms, rich vases, and other objects inlaid or ornamented with metals. His account of the shield of Achilles [‡] proves the art of working the various substances of which it was made, copper, tin, gold, and silver, to have been well understood at that time; and the skill required to represent the infinity of subjects he mentions, was such as no ordinary artisan could possess; and unless similar works had been already made, the poet would not have ventured on the description he has given.

The ornaments in gold, found in Egypt, consist of rings, bracelets, armlets, necklaces, earrings, and numerous trinkets belonging to the toilet; many of which are of the early times of Osirtasen I. and Thothmes III., the contemporaries of Joseph and of Moses. Gold and silver vases, statues, and other objects of gold and silver, of silver inlaid with gold, and of bronze inlaid with the precious metals, were also common at the same time; and besides those manufactured in the country from the produce of their own mines*, the Egyptians exacted an annual tribute from the conquered provinces of Asia and Africa, in gold and silver, and in vases made of those materials.

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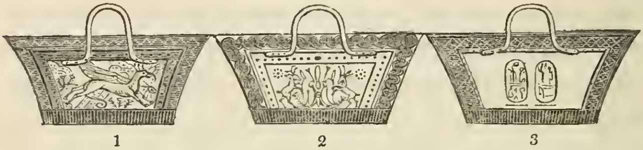
[*] Gen. xxiv. 47. 53.

[†] Hom. Il. xxiii. 741. A silver cup, the work of the Sidonians, Od. iv. 618., &c. *Vide* Il. ii. 872. vi. 236., the armour of Glaucus.

[‡] Hom. Il. xviii. 474.

I have frequently had occasion to notice the elegance of the Egyptian vases, whether of gold or other materials. Many other objects were equally graceful in their form, and the devices which ornamented them; and among these I may cite the golden baskets in the tomb of Remeses, which in their shape call to mind our European bread baskets.



No. 376. — Golden baskets represented in the tomb of king Rameses III. *Thebes.*

At Beni Hassan, the process of washing the ore, smelting, or fusing the metal with the help of the blow-pipe, and fashioning it for ornamental purposes, weighing it and taking an account of the quantity so made up, and other occupations of the goldsmith, are represented; but, as might be supposed, these subjects merely suffice, as they were intended, to give a general indication of the goldsmith's trade, without attempting to describe the means employed.†

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* Diodorus mentions the silver mines of Egypt which produced 3,200 myriads of minæ, but I am not aware of their position. *Vide* Diodor. i. 49., and *suprà*, Vol. I. p. 113. and 234.

† *Vide* wood-cut, No. 374.

The gold mines of Egypt, though mentioned by Agatharcides and later writers, and worked even by the Arab Caliphs, long remained unknown, and their position has only been ascertained a few years since, by M. Linant and Mr. Bonomi. They lie in the Bisháree desert, or, as Edréesee and Aboolfeda call it, the land of Bigá * or Bojá, about seventeen or eighteen days' journey to the south-eastward from Derow; which is situated on the Nile, a little above Kom Ombo, the ancient Ombos.

Those two travellers met with some Cufic funereal inscriptions there, which from their dates show that the mines were worked in the years 339 A.H. (951 A.D.), and 378 A.H. (989 A.D.); the former being in the fifth year of the Caliph Mostukfee Billah, a short time before the arrival of the Fatemites in Egypt, the latter in the fourteenth of El Azeéz, the second of the Fatemite dynasty.

They continued to be worked till a much later period, and were afterwards abandoned, the value of the gold, as Aboolfeda states †, barely covering the expences; nor has Mohammed Ali, who sent to examine them and obtain specimens of the ore, found it worth while to re-open them.

The matrix is quartz; and so diligent a search did the Egyptians establish, throughout the whole of the deserts east of the Nile, for this precious metal, that I never remember to have seen a vein

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* Bigah بجه or Begga is the name which the Bisháreeh Arabs give themselves.

† Aboolfeda's Description of Egypt, s. 68.

of quartz in any of the primitive ranges there, which had not been carefully examined by their miners; certain portions having been invariably picked out from the fissures in which it lay, and broken into small fragments. At a spot near the quarries of *Breccia Verde*, on the road from Coptos to Kossayr, the working of quartz veins has been carried on to such an extent, and on so grand a scale; the houses of the miners are so numerous; the consequence of the place so strongly argued, by the presence of a small stone temple bearing the name and sculptures of Ptolemy Evergetes I.; and the length of time the workmen inhabited it, so distinctly proved by the large mounds of broken pottery found there, (from which the valley has derived the name of Wadee Foäkheer), that I cannot suppose their labours to have been confined to the mere cutting of *tazzi*, sarcophagi, fonts, vases, columns, and similar objects from the breccia quarries, which, too, are distant three miles from this spot; and the number of one thousand three hundred and twenty huts, which I counted in the different windings of the Wadee Foäkheer, containing far more workmen than the quarries would require, appears conclusive respecting the object they had in view, and suggests that they had succeeded in finding gold here also, though probably in far less quantities than in the mines of the more southerly district.

The gold mines are said by Aboolfeda to be situated at El Allaga (or Ollagee); but Eshuranib (or Eshuanib), the principal place, is about three days' journey beyond Wadee Allaga, according to Mr. Bonomi, to whom I am indebted for the following account of the mines. "The direction of the excavations depends," as Diodorus states, "on that of the strata in which the ore is found, and the position of the various shafts differ accordingly. As to the manner of extracting the metal, some notion may be given by a description of the ruins at Eshuranib, the largest station, where sufficient remains to explain the process they adopted. The principal excavation, according to M. Linant's measurement, is about 180 feet deep: it is a narrow oblique chasm, reaching a considerable way down the rock. In the valley, near the most accessible part of the excavation, are several huts, built of the unhewn fragments of the surrounding hills, their walls not more than breast high, perhaps the houses * of the excavators or the guardians of the mine; and separated from them by the ravine or course of the torrent, is a group of houses, about three hundred in number, laid out very regularly in straight lines. In those nearest the mines lived the workmen who were employed to break the quartz into small fragments, the size of a bean, from whose hands the pounded stone passed to the persons who ground it in hand-mills, similar to those now used for corn in the valley of the Nile, made of a granitic stone; one of which is to be found in almost every house at these mines, either entire or broken.

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* Similar huts are met with at all the quarries and mines of these deserts.

"The quartz thus reduced to powder was washed on inclined tables, furnished with two cisterns, all built of fragments of stone collected there; and near these inclined planes are generally found little white mounds, the residue of the operation. Besides the numerous remains of houses in this station, are two large buildings, with towers at the angles, built of the hard blackish granitic, yet luminous rock, that prevails in the district. The valley has many trees, and in a high part of the torrent bed is a sort of island, or isolated bank on which we found many tomb-stones, some written in the ancient Cufic character, very similar to those at E'Souán."

Such is the description Mr. Bonomi has been kind enough to send me of the gold mines of Allaga; and as Diodorus's account of the mining operations, and the mode of extracting the gold, is highly interesting, I shall introduce some extracts from his work.

The historian states that those who worked in the mines were principally captives taken in war, and men condemned to hard labour for crimes, or in consequence of offences against the government. They were bound in fetters, and obliged to work night and day; every chance of escape being carefully obviated by the watchfulness of the guards, who, in order that persuasion might not be used to induce them to relax in their duty, or feelings of compassion be excited for the sufferings of their fellow-countrymen, were foreign soldiers, ignorant of the Egyptian language.

Whether this system was introduced by the

Ptolemies and the latter Pharaohs, or was always carried on in the earliest times, it is difficult to say, Diodorus confining his remarks to the state of the mines during his own time. "The soil," says the historian, "naturally black[*], is traversed with veins of marble[†] of excessive whiteness, surpassing in brilliancy the most shining substances; out of which the overseers cause the gold to be dug, by the labour of a vast multitude of people; for the kings of Egypt condemn to the mines notorious criminals, prisoners of war, persons convicted by false accusations[‡], or the victims of resentment. And not only the individuals themselves, but sometimes even their whole family are doomed to this labour; with the view of punishing the guilty, and profiting by their toil.

"The vast numbers employed in these mines are bound in fetters, and compelled to work day and night without intermission, and without the least hope of escape; for they set over them barbarian soldiers, who speak a foreign language, so that there is no possibility of conciliating them by persuasion, or the kind feelings which result from familiar converse.

"When the earth containing the gold is hard, they soften it by the application of fire, and when it has been reduced to such a state that it yields to moderate labour, several thousands (myriads) of these unfortunate people break it up with iron picks. Over the whole work presides an engineer, who views and selects the stone, and points it out to the labourers. The strongest of them, provided with iron chisels, cleave the marble-shining rock by mere force, without any attempt at skill; and in excavating the shafts below ground they follow the direction of the shining stratum, without keeping to a straight line.

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[*] The rock in which the veins of quartz run is an argillaceous schist.

[†] Diodor. iii. 11. He evidently alludes to the quartz, which is the matrix of the ore, by the expressions "*μαρμαρον*," "*την μαρμαριζουσαν πετραν*," and "*αποστιλϐουσης πετρας*."

[‡] More probably of false accusations.

"In order to see in these dark windings, they fasten lamps to their foreheads, having their bodies painted, sometimes of one and sometimes of another colour, according to the nature of the rock; and as they cut the stone it falls in masses on the floor, the overseers urging them to the work with commands and blows. They are followed by little boys, who take away the fragments as they fall and carry them out into the open air. Those who are above thirty years of age are employed to pound pieces of the stone, of certain dimensions, with iron pestles in stone mortars, until reduced to the size of a lentil. It is then transferred to women and old men, who put it into mills arranged in a long row, two or three persons being employed at the same mill, and it is ground until reduced to a fine powder.

"No attention is paid to their persons, they have not even a piece of rag to cover themselves; and, so wretched is their condition, that every one who witnesses it deplores the excessive misery they endure. No rest, no intermission from toil, are given either to the sick or maimed: neither the weakness of age nor women's infirmities are regarded; all are driven to their work with the lash, till, at last, overcome with the intolerable weight of their afflictions, they die in the midst of their toil. So that these unhappy creatures always expect worse to come than what they endure at the present, and long for death as far preferable to life.

"At length the masters take the stone thus ground to powder, and carry it away to undergo the final process. They spread it upon a broad table a little inclined; and, pouring water upon it, rub the pulverised stone until all the earthy matter is separated, which, flowing away with the water, leaves the heavier particles behind on the board. This operation is often repeated, the stone being rubbed lightly with the hand: they then draw up the useless and earthy substance with fine sponges, gently applied, until the gold comes out quite pure. Other workmen then take it away by weight and measure, and putting it with a fixed proportion of lead, salt, a little tin, and barley bran, into earthen crucibles well closed with clay, leave it in a furnace for five successive days and nights; after which it is suffered to cool. The crucibles are then opened, and nothing is found in them but the pure gold, a little diminished in quantity.

"Such is the method of extracting the gold on the confines of Egypt, the result of so many and such great toils. Nature indeed, I think, teaches that as gold is obtained with immense labour, so it is kept with difficulty, creating great anxiety, and attended in its use both with pleasure and grief."

GILDING.

In the early stages of society when gold first began to be used, idols, ornaments, or other objects, were made of the metal in its pure state, till being found too soft, and too easily worn away, an alloy was added to harden it, at the same time that it increased the bulk of the valuable material. As men advanced in experience, they found that the great ductility of gold enabled them to cover substances of all kinds with thin plates of the metal, giving all the effect of the richness and brilliancy they admired in solid gold ornaments; and the gilding of bronze, stone, silver, and wood, was speedily adopted.

The leaves so used were at first thick, but skill, resulting from experience, soon showed to what a degree of fineness they could be reduced; and we find that in Egypt substances of various kinds were overlaid with fine gold leaf, at the earliest periods of which the monuments remain, even in the time of the first Osirtasen. Some things still continued to be covered with thick leaf, but this was from choice, and not in consequence of any want of skill in the workmen; and in the early age of Thothmes III., they were already acquainted with all the various methods of applying gold; whether in leaf: or by inlaying: or by beating it into other metals, previously tooled with devices to receive it.

That their knowledge of gilding* was coeval with the sojourn of the Israelites in the country is evident from the direct mention of it in the Bible, the ark of shittim wood made by Moses being overlaid with pure gold; and the casting of the metal is noticed on the same occasion†: nor can we doubt that the art was derived by the Jews from Egypt, or that the Egyptians had long before been acquainted with all those secrets of metallurgy, in which the specimens that remain prove them to have so eminently excelled.

The method devised by the Egyptians for beating out the leaf is unknown to us, but from the extreme fineness of some of that covering wooden and other ornaments, found at Thebes, we may conclude it was done nearly in the same way as formerly in Europe, between parchment; and perhaps some membrane taken from the intestines of animals was also employed by them.

In Europe the skin of an unborn calf was at first substituted for the parchment previously used, but in the beginning of the 17th century, the German gold-beaters having obtained a fine pellicle from the entrails of cattle‡, found that they could beat gold much thinner than before, and this still continues to be used, and is known to us under the name of gold-beaters' skin. "About the year 1621," says Beckmann*, "Merunne excited general astonishment, when he showed that the Parisian gold-beaters could beat an ounce of gold into sixteen hundred leaves, which together covered a surface of one hundred and five square feet. But in 1711, when the pellicles discovered by the Germans came to be used in Paris, Réaumur found that an ounce of gold in the form of a cube, five and a quarter lines at most in length, breadth and thickness, and which covered only a surface of about 27 square lines, could be so extended by the gold-beaters, as to cover a surface of more than 1466½ square feet. This extension, therefore, is nearly one half more than was possible about a century before."

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* Pliny mentions the lycophoron, a composition used for attaching gold to wood. Plin. xxxv. 6. "Sinopidis Ponticæ selibra, silis lucidi libris x., et melini Græciensis duabus mixtis tritisque una, per dies xii., leucophoron fit, hoc est, glutinum auri, cum inducitur ligno." *Vide* Theophrast. on stones. s. 46.

† Exod. xxv. 11, 12.

‡ This "pelle del budello," is mentioned by Lancellotti, who wrote in the year 1636.

Many gilt bronze vases, implements of various kinds, trinkets, statues, toys, and other objects, in metal and wood, have been discovered in the tombs of Thebes: the faces of mummies are frequently found overlaid with thick gold leaf; the painted cloth, the wooden coffin, were also profusely ornamented in this manner; and the whole body itself of the deceased was sometimes gilded, previous to its being enveloped in the bandages. Not only were small objects appertaining to the service of the gods, and connected with religion, or articles of luxury and show, in the temples, tombs, or private houses, so decorated; the sculptures on the lofty walls of an adytum, the ornaments of a colossus, the doorways of the temples, and parts of numerous large monuments were likewise covered with gilding; of which the wooden heifer which served as a sepulchre to the body of king Mycerinus's daughter*, the sculptures at the temple of Kalabshi in Nubia, the statue of Minerva sent to Cyrene by Amasis †, and the Sphinx at the pyramids may be cited as instances.

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* *Vide* Beckmann's valuable work, the History of Inventions, vol. iv. on Gilding.

Gold is supposed by many to have been used‡ some time before silver, but the earliest authority, which is that of the Bible, mentions both these metals at the most remote age. The Egyptian sculptures represent silver as well as gold in the time of the third Thothmes, and silver rings have been found of the same epoch.§ Abraham was said to have been "very rich, in cattle, in silver, and in gold||;" and the use of silver as money ¶ is distinctly pointed out in the purchase of the field of Ephron, with its cave**, which Abraham bought for "four hundred shekels of silver, current money with the merchant."

On this occasion, as usual, the price paid was settled by weight, a custom retained among the

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* Herodot. ii. 129. 132.

† Herodot. ii. 182.

‡ Pliny attributes the art of working gold to Cadmus, vii. 56.

§ In the museum of Alnwick Castle is a silver ring of Amunoph III. Silver rings and ornaments are less common of every epoch than gold.

|| Gen. xiii. 2. But no mention is made of it as money, till after Abraham's return from Egypt, as Goguet has justly observed, tom. i. l. i. c. 1.

¶ The word silver, כסף, is commonly used in Hebrew to signify money, as *argent* in French.

** Gen. xxiii. 16, 17.

Egyptians, Hebrews*, and other eastern people, till a late period; and, indeed, until a government stamp, or some fixed value was given to money, this could be the only method of ascertaining the price paid, and of giving satisfaction to both parties. Thus Joseph's brethren, when they discovered the money returned into their sacks, brought it back to Egypt, observing that it was "in full weight;" and the paintings of Thebes frequently represent persons in the act of weighing† gold, on the purchase of articles in the market. This continued to be the custom when rings‡ of gold and silver were used in Egypt for money, and even to the time of the Ptolemies, who established a coinage of gold, silver, and copper, in the country.

These princes were not the first who introduced coined money into Egypt: it had been current there during the Persian occupation of the country; and Aryandes, who was governor of Egypt, under Cambyses and Darius, struck silver coins, in imitation of the gold Darics of his sovereign, for which act of presumption he was condemned to death.§

It is uncertain, as Pliny observes, when and where the art of stamping money originated. Herodotus attributes it to the Lydians, "the first people who coined gold and silver for their use‖; Servius Tullius made¶ copper money, about the year 560 B. C., and impressed upon it the figure of a sheep, "pecus," whence it obtained the name "pecunia"; silver was coined at Athens* 512 years before our era, and at Rome, five years before the first Punic war†, or 269 B. C.‡, and some suppose Phidon, King of Argos, to have invented weights and measures, and silver coinage§, in the year 895 B. C.‖

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* *Vide* Vol. II. p. 11. note.

† *Vide* woodcut, No. 78. p. 10. Vol. II.

‡ The Chinese and Japanese have a sort of ring money, or at least round coins with a hole in the centre, which are strung together. *Vide* Plin. xxxiii. 1.

§ Herodot. iv. 166.

‖ Herodot. i. 93. *V.* Jul. Poll. onom. 9; vi. 83, Lucan. Phars. vi. 402.

¶ Plin. liii. 3.

Though stamped money was not used by the ancient Egyptians, we have evidence of weights and measures having been invented by them long before the Greeks existed as a nation; and it is probable that they were known even in Greece previous to the time of Phidon.

The balance used for weighing gold differed slightly from those of ordinary construction, and was probably more delicately formed. It was made, as usual, with an upright pole, rising from a broad base or stand, and a cross beam turning on a pin at its summit; but instead of strings suspending the scales, was an arm on either side, terminating in a hook, to which the gold was attached in small bags.¶

Large scales were generally a flat wooden board, with four ropes, attached to a ring at the extremity of the beam; and those of smaller size were of bronze, one of which I found in Upper Egypt, one and a half inch in diameter, pierced near the edge in three places, for the strings.

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* Aristot. Œconom. lib. ii.

† Plin. loc. cit.

‡ Livy however mentions the Denarius (a silver coin), much earlier. B. C. 337, (viii. 11.). Gold was not struck at Rome till B. C. 207.

§ "In Ægina." Strabo lib. viii. p. 259; on the authority of Ephorus.

‖ Pausanias says, gold and silver money was unknown in the age of Polydorus, king of Sparta, who died B. C. 724, (lib. iii. c. 12.). That it was not in use at the time of the Trojan war, is shown by Homer. *Vide* Il. vii. 473., their mode of buying wine.

¶ *Vide* woodcut, No. 374.

The principle of the common balance was simple and ingenious; the beam passed through a ring suspended from a horizontal rod, immediately above and parallel to it, and when equally balanced, the ring, which was large enough to allow the beam to play freely, showed when the scales were equally poised, and had the additional effect of preventing the beam tilting, when the goods were taken out of one, and the weights suffered to remain in the other.* To the lower part of the ring a small plummet was fixed, and this being touched by the hand, and found to hang freely, indicated, without the necessity of looking at the beam, that the weight was just. The figure of a baboon, sometimes placed upon the top, was not connected in any way with the balance, but was the emblem of the god Thoth, the regulator of measures, of time, and of writing, in his character of the moon; but I do not find any notion of the goddess of Justice being connected with the balance, except in the judgment scenes of the dead.

The pair of scales was the ordinary and, apparently, only kind of balance used by the Egyptians; no instance of the steel-yard being met with in the paintings of Thebes, or of Beni Hassan: and I conclude that the introduction of the latter is confined to a Roman era.

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* *Vide* woodcut, No. 78. Vol. II. p. 10.

The Egyptians had another kind of balance, in which the equalisation of the opposite weights was ascertained by the plummet; and this last, whose invention has been ascribed by Pliny to Dædalus, is shown to have been known and applied in Egypt at least as early as the time of Osirtasen, the contemporary of Joseph.

COPPER, BRONZE, IRON.

For ordinary purposes copper was most commonly used; arms, vases, statues, instruments, and implements of every kind, articles of furniture, and numerous other objects, were made of this metal hardened by an alloy of tin, and even chisels for cutting stone, as well as carpenters' tools, and knives, were of bronze. It is generally allowed that copper or bronze, was known long before iron*, and though Tubal-Cain is said to have been "the instructor of every artificer in brass and *iron*†," no direct mention is made of iron arms ‡ or tools § till after the Exodus; and some are even inclined to doubt the *barzel* of the Hebrews being really that metal.

According to the Arundelian marbles, iron was known one hundred and eighty-eight years before the Trojan war, about 1370 years B.C., but Hesiod, Plutarch ||, and others, limit its discovery to a much

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* Thus Lucretius, "Sed prius æris erat quam ferri cognitus usus," lib. v. 1292.

† Gen. iv. 22.

‡ Numb. xxxv. 16.

§ Deut. xxvii. 5.

|| Paus. Grec. lib. iii. c. 3. Lacon.

later period, after the capture of Troy. Homer, however, distinctly mentions its use[*]; and that there is little reason to doubt the *sideros* of the poet being iron, is shown by the simile[†], derived from the quenching of iron in water, which he applies to the hissing noise produced on piercing the eye of Polyphemus with the pointed stake, thus rendered by Pope:

> "And as when armourers temper in the ford
> The keen-edg'd poleaxe, or the shining sword,
> The red hot metal hisses in the lake,
> Thus in his eyeball hiss'd the plunging stake."

Among the earliest authorities for the use of iron, may be cited the bedstead of Og the king of Bashan[‡], who is said to have lived about the year 1450, before our era; and Thrasyllus[§] agrees with the Arundelian marbles in supposing iron to have been known before the Trojan war, or indeed one hundred and fourteen years previous to the foundation of Troy[||], 1537 before our era. On the other hand it has been argued, that offerings of iron in the temples of Greece distinctly showed the value attached to that metal, as well as its limited use for ordinary purposes, and rings of iron were worn by the ancients, some of which have been found in the tombs of Egypt. But these last are of very late date, long after iron was commonly used, and I possess one of them, engraved with the figure of Harpocrates, which is undoubtedly of a Ptolemaic or Roman era, and which only claims some degree of interest, from its bearing a device noticed by Pliny as becoming fashionable at Rome in his time.*

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[*] Hom. Il. xxiii. 261, &c.

[†] Hom. Od. ix. 391.

> "Ως δ' οτ' ἀνηρ χαλκευς πελεκυν μεγαν, ηε σκεπαρνον,
> Ειν υδατι ψυχρῳ βαπτει μεγαλα ιαχοντα,
> Φαρμασσων (το γαρ αυτε σιδηρου τε κρατος εστιν)
> Ως του σιζ' οφθαλμος ελαϊνεῳ περι μοχλῳ."

[‡] Deut. iii. 11.

[§] Clem. Alex. Strom. i.

[||] Founded B.C. 1423.

That iron, as early as the days of Lycurgus, was held in little estimation, is shown by that legislator forbidding the introduction of gold and silver in his republic, and restricting the Spartans to the use of iron; and some notion may be formed of its value at that time by the assertion of Plutarch†, that it required a cart drawn by two oxen to carry the small sum of ten minæ.

The Jews appear to have been acquainted with two kinds of iron, previous to the Babylonish captivity, the *barzel* which was in common use, and the northern iron, as well as steel‡: even as early as the days of Job§ iron was known; and Moses mentions an iron furnace.‖

One of the arguments against the early use of iron¶ is the difficulty of smelting the ore, and of reducing it to a malleable state; and the various processes required to discover all its most useful properties, render it less likely to be employed than a more ductile metal. Gold, silver, and copper, were easily fused, and a single process sufficed to make them available for every purpose; the principal art required for fabricating implements of copper depending on the proper proportions and qualities of alloy introduced.

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* Plin. xxxiii. 3. "Jam vero Harpocratem, statuasque Ægyptiorum numinum, in digitis viri quoque portare incipiunt."

† Plut. in Lycurgo.

‡ Jerem. xv. 12.

§ Job, xxviii. 2. "Iron is taken out of the earth, and brass is molten out of the stone."

‖ Deut. iv. 20.

¶ Pliny says the fabulous Cyclopes were the inventors of the ironsmith's forge, and the Idæi Dactyli of Crete, according to Hesiod, the first to introduce the use of iron. Plin. vii. 56.

"Those three metals," as Robinson has observed [*], "are found in their perfect state in the clefts of rocks, in the sides of mountains, or the channels of rivers. They were accordingly first known, and first applied to use. But iron, the most serviceable of all, and to which man is most indebted [†], is never discovered in its perfect form; its gross and stubborn ore must feel twice the force of fire, and go through two laborious processes, before it becomes fit for use. Man was long acquainted with the other metals before he acquired the art of fabricating iron, or attained such ingenuity as to perfect an invention, to which he is indebted for those instruments wherewith he subdues the earth and commands all its inhabitants."

In the infancy of the arts and sciences, the difficulty of working iron might long withhold the secret of its superiority over copper and bronze; but it cannot reasonably be supposed that a nation so advanced, and so eminently skilled in the art of working metals as the Egyptians, should have remained ignorant of its use, even if we had no evidence of its having been known to the Greeks and other people; and the constant employment of bronze arms and implements is not a sufficient argument against their knowledge of iron, since we find the Greeks and Romans made the same things of bronze long after the period when iron was universally known.

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[*] Robertson, America, book iv. p. 125.

[†] *Vide* Herodot. i. 68.

Another argument, to show that bronze was used in Greece before iron, is derived from the word χαλκευς (smith) in Greek, having the signification of "coppersmith," whether applied to a worker of copper or iron.* In Latin, on the contrary, *ferrum*†, "an iron," is the word frequently applied to a sword; and some have hence argued the use of iron for those weapons, at the earliest period, among the Romans. Yet we find that their swords were constantly made of bronze, as well as their defensive armour. The Etruscans almost invariably used iron for swords, daggers, spear heads, and other offensive weapons, and confined bronze to defensive armour; a much more reasonable custom, inasmuch as the iron is more capable of perforating the softer metal: and if the early Romans did make their swords of iron, it is probable they adopted the custom from their Italian neighbours.

After examining numerous authorities, some of which assert that nations of antiquity were confined to the use of copper and bronze, while others affirm that iron was known at a most remote epoch, we may still remain in uncertainty respecting the question. But to conclude, from the want of iron instruments, or arms, bearing the names of early monarchs of a Pharaonic age, that bronze was alone used, is neither just nor satisfactory; since the decomposition of that metal, especially when buried for ages in the nitrous soil of Egypt, is so speedy as to preclude the possibility of its preservation. Until we know in what manner, and for what sort of stone, the Egyptians employed bronze tools, the discovery of them affords no additional light, nor even argument; since, as I before observed, the Greeks and Romans continued to make bronze instruments of various kinds long after iron was known to them*; and the general use of bronze may have arisen from the greater facility of working the metal, remelting and casting it afresh, as well as from its being easier to find than iron: for though this last, in its various combinations, is more universally diffused over the face of the globe†, it does not always occur in a state of which the miner can easily avail himself, and I only know of one mine in Egypt worked by the ancients. It lies in the eastern desert, between the Nile and the Red Sea, at a place called Hammámi, and was discovered by my friend Mr. Burton, who visited it in 1822, and found the metal to be in the form of specular and red iron ore.

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* Hom. Od. ix. 391. Herodot. i. 68.

† Those who derive barzel from "bers" the Chaldee and Syriac word signifying "to perforate," might perhaps suppose ferrum "iron" taken from "ferire" "to strike."

In Ethiopia iron was much more abundant than in Egypt, and Herodotus may be correct in stating that copper was there a rare metal*; though we are not disposed to believe his assertion of prisoners in that country being bound with golden fetters.

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* *Vide* Beckmann's History of Inventions, on the early use of steel, vol. iv.

† As Pliny observes, "Metallorum omnium vena ferri largissima est," xxxiv. c. 14.

In the sepulchres of Thebes, I have had occasion to remark butchers represented sharpening their knives on a round bar of metal attached to their apron; and the blue colour of the blades and the distinction maintained between the bronze and steel weapons in the tomb of Remeses III., one being painted red and the other blue, leave little doubt that the Egyptians of an early Pharaonic age were acquainted with the use of iron.

Many implements of husbandry, the plough, the hoe, and the fork, were frequently of wood, as simple in their form as in the materials of which they were made; the ploughshare was probably sometimes sheathed with, or the blade of a hoe formed of, metal; but it is uncertain whether iron was employed for this purpose, or if, like the tools of earlier days mentioned by Hesiod†, they were confined to bronze.

Several wooden hoes have been found in Egypt, and are now preserved in the museums of Europe: the blades and handles are simply inserted the one into the other, and bound together in the middle with a twisted rope; and their general appearance, according exactly with those represented in the agricultural scenes of the tombs, shows them to have been the kind most commonly used*, even to the latest times.

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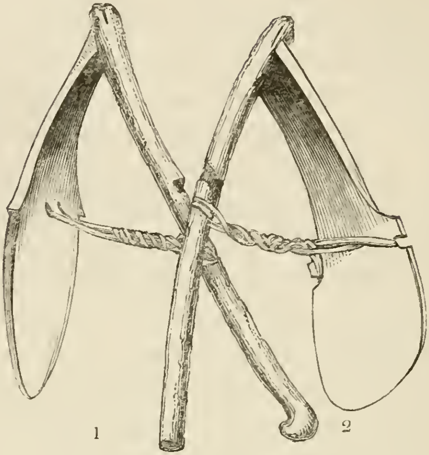
* Herodot. iii. 23.

† Hesiod, Oper. et Dies. v. 151. "Men tilled the ground with bronze, iron not being as yet known."



No. 377. Wooden hoes. *Berlin Museum.*

It is true that the Berlin Museum has the head of a small hoe, of iron, but of what date is uncertain; and no inference can be drawn from it, especially as its form differs essentially from those of the paintings.

I have already stated that the speedy decomposition of iron would be sufficient to prevent our finding implements of that metal of an early period, and that the greater opportunities of obtaining copper ore, added to the facility of working it, were a reason for preferring the latter whenever it answered the purpose instead of iron. I shall presently endeavour to show how bronze tools might be made available for sculpturing and engraving stone; though there is great difficulty in accounting for their use in mines and quarries, where the stone was frequently hewn with them; as Agatharcides * informs us in his account of the gold mines, and as I have reason to believe was done in cutting the limestone rock of the tombs at Thebes; having found a bronze chisel amidst the chippings of the stone, where it had been accidentally left by the workmen.

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* *Vide* wood-cut, No. 93. Vol. II. p. 99.

The hieroglyphics on obelisks and other granitic monuments are sculptured with a minuteness and finish which, even if they used steel as highly tempered as our own, cannot fail to surprise the beholder, and to elicit from him the confession that our modern sculptors are unable to vie with them in this branch of art.

Some are cut to the depth of more than two inches, the edges and all the most minute parts of the intaglio presenting the same sharpness and accuracy; and I have seen the figure of a king in high relief, reposing on the lid of a granite coffin, which was raised to the height of nine inches above the level of the surface. What can be said, if we deny to men who executed such works as these the aid of steel, and confine them to bronze implements? Then, indeed, we exalt their skill in metallurgy far beyond our own, and indirectly confess that they had devised a method of sculpturing stone of which we are ignorant. In vain should we attempt to render copper, by the addition of certain

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* He says *λατομιδες χαλκαι*, "*wedges of bronze* are found," and infers that they were not then acquainted with iron.

alloys, sufficiently hard to sculpture granite, basalt, and stones of similar quality. No one who has tried to perforate or cut a block of Egyptian granite will scruple to acknowledge that our best steel tools are turned in a very short time *, and require to be retempered: and the labour experienced by the French engineers, who removed the obelisk of Luxor from Thebes, in cutting a space less than two feet deep, along the face of its partially decomposed pedestal, suffices to show that, even with our excellent modern implements, we find considerable difficulty in doing what to the Egyptians would have been one of the least arduous tasks.

Some have imagined that the granite being somewhat softer, at the time it is taken from the quarry, was more easily sculptured when the Egyptians put up the obelisks than at present, and thus satisfy themselves that the labour was considerably less; but this argument is entirely overthrown by the fact of other sculptures having been fre-

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* I am indebted to Sir R. Westmacott for the following observations on this subject:—"Granite, as most hard materials of that nature, being generally worked with a pick of various strength, until reduced to a surface, the duration of the tool depends on its form; the more obtuse the longer it will work, remaining longer cold. In *jumping* (as it is termed) holes for the admission of bolts into fractured parts of granite, the tools are usually of strong tempered iron, about three quarters of an inch in diameter, which resist the heat sometimes half an hour, seldom longer. One man holds, and turns, or moves the tool, whilst the other strikes it with a heavy hammer, the hole being supplied with water. Tools of less diameter are formed of steel, but these will not resist more than 300 strokes, when the points fly, and require to be fresh battered. Sculptors generally use tools formed of blistered steel, or of cast steel, the finer sort, highly tempered, by immersing them when heated to a proper degree, into cold water. Carpenters' tools again, and saws, are of the best cast steel, and are tempered in oil."

quently added, one hundred and one hundred and fifty years after the erection of the monument, as in the lateral lines of hieroglyphics on obelisks; which are sometimes found more deeply cut and more beautifully executed than those previously sculptured. Others have suggested that the stone being stunned, as it is termed, in those places where it was to be sculptured, yielded more readily to the blow of the chisel; but neither is this sufficient to produce the effect proposed, nor an advantage exclusively enjoyed by the ancient Egyptians.

Thus, then, we find that the facility they possessed of sculpturing granite is neither attributable to any process for bruising the crystals, nor to its softer state on coming from the quarry: we must therefore account for it in the skill they had acquired, and endeavour to discover the means they employed with such wonderful success.

The hieroglyphics on the obelisks are rather engraved than sculptured; and, judging from the minute manner in which they are executed, we may suppose they adopted the same process as engravers, and even in some instances employed the wheel and drill. That they were acquainted with the use of emery powder* is not at all improbable, since, being found in the islands of the Archipelago, it was within their reach; and if this be admitted, we can account for the admirable finish and sharpness of the hieroglyphics on granitic and basaltic monuments, and explain the reason of their preferring tools of bronze to those of harder and more compact steel: for it is evident the powder enters more readily into the former, and its action upon the stone is increased in proportion to the quantity retained by the point of the chisel; whence we now prefer tools of soft iron to hard steel for the same purpose.

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* It is probable that this powder was used in sawing granite, a process not uncommonly resorted to by the Egyptians, and the presence of oxyde of copper in the part where the rock was cut, which surprised De Rozière and others, may thus be more readily accounted for.

As far as the sculpture or engraving of hieroglyphics, this explanation might suffice for their preference of bronze implements; but when we find tools used in quarries made of the same metal, we are unable to account for it, and readily express our surprise how they could render a bronze chisel capable of hewing stone. We know of no means of tempering copper, under any form or united with any alloys, for such a purpose. The addition of tin or other metals to harden it, if exceeding certain proportions, renders it too brittle for use; and that such is not the case is evident from the chisel I found at Thebes, which, though it contains an alloy apparently of tin, is far from being brittle, and is easily turned by striking it against the very stone it was once used to cut. Had it depended on the proportions of its alloys, it ought still to possess the same power as formerly, and its point should act in the same manner upon the stone; for, what is very remarkable, the summit was turned over by the blows it had received from the mallet, while the point was intact, as if it had recently left the hands of the smith who made it.

What, then, gave it the power of cutting the stone, and of resisting in this manner? for unless some medium was employed, as a sheath of steel or other protection to its point, we must confess that the Egyptians appear to have possessed certain secrets in hardening or tempering bronze, with which we are totally unacquainted. The size of this chisel is 9¼ inches in length; its diameter at the summit is 1 inch, and the point is $\frac{7}{10}$ths of an inch in its greatest width: its weight is 1 lb. 12 ozs., and in general form it resembles those now used by the masons of modern Europe.

The skill of the Egyptians in compounding metals is abundantly proved by the vases, mirrors, arms, and implements of bronze, discovered at Thebes, and other parts of Egypt; and the numerous methods* they adopted for varying the composition of bronze, by a judicious admixture of alloys†, are shown in the many qualities of the metal. They had even the secret of giving to bronze or brass‡ blades a certain degree of elasticity; as may be seen in the dagger of the Berlin Museum already noticed§, which probably depended on the mode of hammering the metal, and the just proportions of peculiar alloys.

Another remarkable feature in their bronze is the resistance it offers to the effect of the atmosphere; some continuing smooth and bright, though buried for ages, and since exposed to the damp of European climates, and some presenting the appearance of *previous* oxidation purposely induced.*

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* Greek bronzes of the earliest and latest times have all the same proportion of alloy. A little silver sometimes occurs, but this is supposed to have entered accidentally with the tin.

† In almost all the bronzes hitherto analysed, the proportion is about twelve parts of tin in a hundred.

‡ There is no direct proof of brass being known to the ancients, and no analysis has yet shown the presence of zinc. I have a ring apparently of brass, but it is possible that gold is there used instead of zinc.

§ In Vol. I. p. 320.

It is not known at what period they began to cast statues and other objects in bronze, or if the use of beaten copper long preceded the art of casting in that metal. No light is thrown on this point by the paintings of Beni Hassan, and Thebes, or by the tombs in the vicinity of the pyramids, which, from their early date, would be an authority highly satisfactory and important. It is, indeed, singular that at no period do we find any representation, among the many subjects connected with the trades, arts, and occupations of the Egyptians, which relate to this process; even in tombs or on monuments made at a time when we know, from positive evidence, that they were acquainted with it:—another convincing proof that no argument against the existence of a custom ought to be derived from the circumstance of its not being indicated on the monuments.

Many bronze statues have been found, evidently, from their style, of a very early period; but in the absence of a king's name, it is impossible to fix their exact date, though I feel persuaded that the art of casting metal was known before the commencement of the 18th dynasty, and it is probable that many specimens exist of the age of Osirtasen and Thothmes.

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* I suppose the metal was then coated with some substance which filled the pores. This is done at the present day.

Pausanias[*], in speaking of the art of casting metal, observes that the people of Pheneum in Arcadia, pretended that Ulysses dedicated a statue of bronze to Neptune Hippius, in order that he might recover the horses he had lost, through the intervention of the Deity; "and indeed," he adds, "they showed me an inscription on the pedestal of the statue offering a reward to any person who should find and take care of the animals; but I do not give credit to the whole of their statement, and no one can persuade me that Ulysses erected a *bronze* statue to Neptune. The art of fusing metal and casting it in a mould was not yet known; a statue was made in those times like a dress, successively, and in pieces, not at one time, or in a single mass, as I have already shown[†] in speaking of the statue of Jupiter, surnamed the Most High. In fact, the first who cast statues were Rhœcus the son of Philæus, and Theodorus[‡] the son of Telecles, both natives of Samos; the latter the same who engraved[§] the beautiful emerald in the ring of Polycrates."

The Samians were noted at an early period for their skill in this branch of art; and before the foundation of Cyrene, or B.C. 630., they made a bronze vase, ornamented with griffins, supported on three colossal figures of the same metal, for the temple of Juno.* The art was also known at a very remote period in Italy. Among the Etruscans bronze statues were common before the foundation of Rome; and Romulus is said to have placed a statue of himself, crowned by Victory, in a four-horsed car of bronze, which had been captured at the taking of Camerium.†

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[*] Paus. Grec. lib. viii. c. 14. Arcad.

[†] Lib. iii.

[‡] Pliny (vii. 56.) says "Theodorus invented the rule, the level, the turner's instrument, and the key."

[§] Herodot. iii. 41. Plin. xxxvii. 1.

Pliny attributes the discovery of gold and the secret of smelting it to Cadmus‡, who is supposed to have gone to Greece 1493 years before our era; but this, like most of the inventions mentioned by him, was long before known to the Egyptians; and we may apply the same remark to the supposed discovery of Rhœcus and Theodorus.

It is uncertain whether the Egyptians possessed the art of damaskeening or inlaying iron with gold, since, owing to the speedy decomposition of that metal, nothing made of iron has been preserved of a remote era; but we may conclude, from their inlaying bronze in this manner, that it was not unknown to them.

Some have supposed that Glaucus of Chios was the inventor of this art, and that the stand of his silver vase presented to the temple of Delphi by Alyattes king of Lydia, which, according to Herodotus§, was the most beautiful of all the offerings there, was made of iron inlaid with gold. But the description given of it by Pausanias * will not sanction this opinion, as he expressly states "it consisted of several plates of iron, adjusted one over the other in the form of steps, the last, that is, those of the summit, curving a little outwards. It had the form of a tower, large at the base and decreasing upwards, and the pieces of which it was composed were not fastened either with nails or pins, but simply soldered together."

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* Herodot. iv. 152.

† Dionys. Hal. Ant. Rom. l. ii. Plut. in Rom.

‡ Plin. vii. 56.

§ Herod. i. 25.

The Greeks, however, were not ignorant of damaskeening, and though the stand of Alyattes' vase was not so inlaid, it is certain they possessed the art, and ornamented goblets and other objects in that manner. The process was very simple: the iron was carved with various devices, and the narrow lines thus hollowed out were filled with gold, or with silver, which in some instances were probably soldered, and in others simply beaten in with the hammer, the surface being afterwards filed and polished.

The term damaskeening, though generally confined to iron or steel so inlaid (owing to its having been borrowed from the specimens of this work in the modern sword blades of Damascus), may with equal propriety be extended to any metal; and numerous instances of bronze inlaid with gold and silver occur in statues, scarabæi, and various ornamental objects discovered at Thebes and other places. Hard stones were also engraved in the same manner, and the intaglio filled with gold or silver beaten into it;

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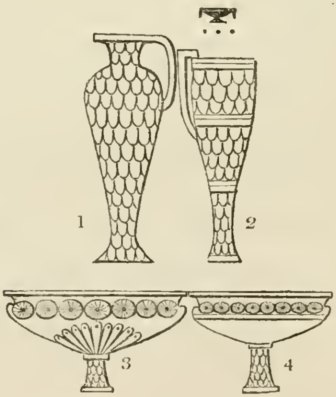
* Paus. lib. x. 16. Phoc.

a process commonly adopted at the present day by the Turks, and other Eastern people in their *hookahs* or *nârgilehs*, and in the stone ornaments of their amber mouth-pieces; but at what time this was first done it is needless to conjecture.

The art of soldering metals had long been practised in Egypt before the time of Glaucus; and it is curious to find gold and bronze vases, made apparently in the same manner as the stand of that mentioned by Pausanias, represented at Thebes in sculptures executed during the reign of the third Thothmes, 1490 years before our era, and consequently many centuries previous to the Chian artist. They are shown to have been composed of plates of metal, imbricated, or overlapping each other, as Pausanias describes, and sometimes bound at intervals with bands of metal. Instances occur in the same sculptures of gold vases with



No. 378. — Vases of the time of Thothmes III., imbricated, or ornamented with plates of metal. *Thebes.*

stands formed of similar plates; which are interesting also from the elegance of their forms.

In coarser work, or in those parts which were out of sight, the Egyptians soldered with lead, but we are ignorant of the time when it was first used for that purpose, though it could only have been after the discovery of tin; for, as Pliny[*] justly observes, "lead can only be united by the addition of tin, nor is this last efficient without the application of oil."[†] The oldest specimen of metal soldered with lead, with which I am acquainted, is the sistrum of Mr. Burton: its date, however, is uncertain; and though, from the style of the figures engraved upon it, we may venture to ascribe it to a Pharaonic age, the exact period when it was made cannot be fixed.

In early ages, before men had acquired the art of smelting ore, and of making arms and implements of metal, stones of various kinds were used, and the chasseur was contented with the pointed flint with which nature had provided him. The only effort of his ingenuity was to fix it in some kind of handle, or at the extremity of a reed, in order to make the knife, or the arrow; and we still witness the skill which some savage people of the present day display in constructing those rude weapons.

The Egyptians, at a remote period, before civilisation dawned upon them, probably adopted the same; since we find that stone-tipped arrows continued to be occasionally used for hunting, even after they had improved every species of weapon, and after the arts had arrived at the state of perfection in which they appear subsequently to the accession of the 18th dynasty. Long habit had reconciled them to the original reed shaft, with its head of flint, and even to arrows made with a point of hard wood inserted into them, which were also the remnant of a primæval custom.

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[*] Plin. xxxiv. 16.

[†] Or resin, which we now use.

Those, however, who preferred them of a stronger kind, adopted arrows of wood tipped with bronze heads; and these were considered more serviceable, and were almost invariably used in war. But when this improvement took place in the construction of their arms it is impossible to conjecture, being coeval with the early stages of a civilisation, which is concealed by the veil of ages, and dates long before the period of which any monuments remain.

It is, indeed, a remarkable fact that the first glimpse we obtain of the history and manners of the Egyptians shows us a nation already advanced in all the arts of civilised life, and the same customs and inventions that prevailed in the Augustan era of that people, after the accession of the 18th dynasty, are found in the remote age of Osirtasen, the contemporary of Joseph; nor can there be any doubt that they were in the same civilised state when Abraham visited the country.

I have observed that the fact of private citizens going unarmed, and of the soldier laying aside his sword and other weapons when not on service, may be considered a strong proof of refinement, and of their advancement in the habits of social life. The same custom was already adopted at the time to which I allude; and many circumstances unite in proclaiming the civilisation of Egypt, at least as early as the 18th century before our era. How far does this throw us back into the infancy of the world! at least, of the world peopled by the descendants of Noah — and, when we recollect that the pyramids of Memphis were erected within three hundred years after the era assigned to the deluge; and that the tombs of Beni Hassan were hewn and painted with subjects describing the arts and manners of a highly civilised people, about six hundred years after that event; it may occur that the distance between the deluge and the construction of those pyramids and tombs is not greater than from the present day to the reign of our own Elizabeth, and Henry III.

The same prejudice in favour of an ancient and primitive custom retained the use of stone knives for certain purposes connected with religion among the Egyptians; and Herodotus tells us it was usual to make an incision in the body of the deceased, when brought to be embalmed, with an Ethiopic stone.* This name, though very indefinite, seems here, as in all instances where the stone is said to be applied to a similar purpose, to signify flint; and this conjecture is not only confirmed by probability, and by the frequent use of it by many people as a cutting instrument, but by the fact of our finding several knives of that stone in the tombs of Thebes. In other cases, the Ethiopic stone, mentioned by Herodotus, is evidently granite, so called from being common in Ethiopia; and it is possible that the flint received that name from its black colour.

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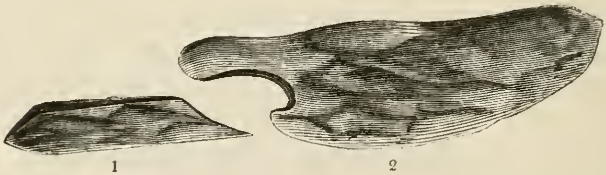
* Herodot. ii. 86.

The knives found in the excavations and tombs, many of which are preserved in our European museums, are generally of two kinds; one broad and flat like the blade of a knife, the other narrow and pointed at the summit, several of which are preserved in the Berlin museum. These last * are supposed to have been used for making the incision in the side of the body, for the purpose of removing the intestines, preparatory to the embalming process already mentioned; and, considering how strongly men's minds are prepossessed in favour of early habits connected with religion, and how scrupulous the Egyptians were, above all people, in permitting the introduction of new customs in matters relating to the gods, we are not surprised that they should have retained the use of these primitive instruments in a ceremony of so sacred a nature as the embalming of the dead.



No. 379. Flint knives. *Berlin Museum.*

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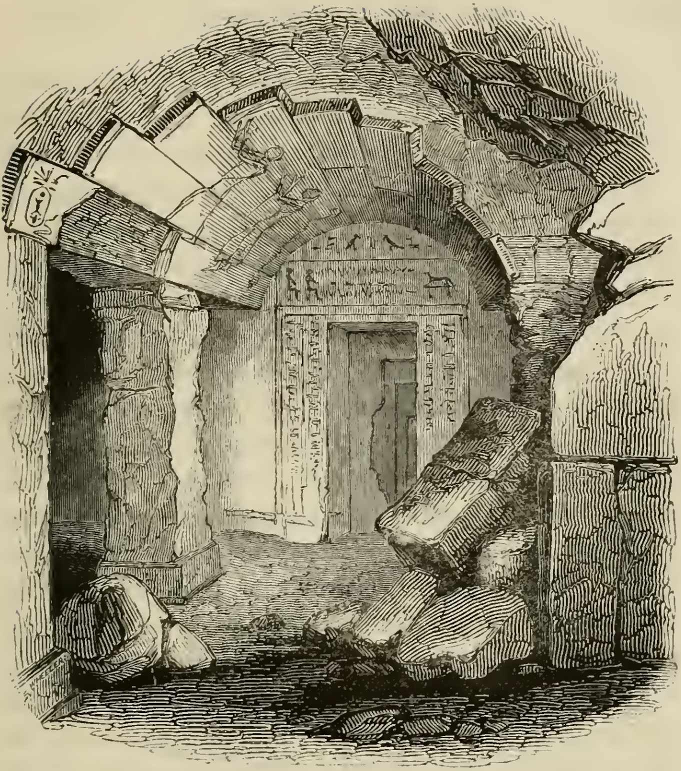
* *Vide* wood-cut 379, fig. 1.



Vignette I. — Tomb at Saqqara, arched with stone, of the time of Psamaticus II. whose name occurs on the roof to the left, and other places.

CHAP. X.

Style of Art among the Egyptians. — Names of early Kings: Cheops, or Suphis, and others. — Some of the Subjects of the Sculptures in the Temples. — Colours. — Relief and Intaglio. — Painting. — Brick Pyramids. — The Arch. — Quarries. — Large Blocks of Stone moved. — Bellows, Siphons, Inventions. — Dresses. — Wigs. — Women's Dresses and Jewellery. — Eyes painted. — Baths. — Medical Men. — Exvotos.

STYLE OF ART AMONG THE EGYPTIANS.

The same veneration for ancient usage and the stern regulations of the priesthood, which forbade any innovation in the form of the human figure, particularly in subjects connected with religion, fettered the genius of the Egyptian artists, and prevented its developement. The same formal outline, the same attitudes and postures of the body, the same conventional mode of representing the different parts were adhered to, at the latest as at the earliest periods; no improvements, resulting from experience and observation, were admitted in the mode of drawing the figure, no attempt was made to copy nature, or to give proper action to the limbs. Certain rules, certain models, had been established by law, and the faulty conceptions of early times were copied and perpetuated by every successive artist. For, as Pluto and Synesius inform us, sculptors were not suffered to attempt any thing contrary to the regulations laid down regarding the figures of the gods; they were forbidden to introduce any change, or to invent new subjects and habits; and thus the art, and the rules which bound it, always remained the same.

Egyptian bas-relief appears to have been, in its origin, a mere copy of painting, its predecessor. The first attempt to represent the figures of gods, sacred emblems, and other subjects, consisted in painting simple outlines of them on a flat surface, the details being afterwards put in with colour; but in process of time these forms were traced on stone with a tool, and the intermediate space between the various figures being afterwards cut away, the once level surface assumed the appearance of a bas-relief. It was, in fact, a pictorial representation on stone, which is evidently the character of all the bas-reliefs on Egyptian monuments; and which readily accounts for the imperfect arrangement of their figures.

Deficient in conception, and above all in a proper knowledge of grouping, they were unable to form those combinations which give true expression; every picture was made up of isolated parts, put together according to some general notions, but without harmony, or preconceived effect. The human face, the whole body, and every thing they introduced, were composed in the same manner, of separate members placed together one by one, according to their relative situations: the eye, the nose, and other features composed a face; but the expression of feelings and passions was entirely wanting; and the countenance of the king, whether charging an enemy's phalanx in the heat of battle, or peaceably offering incense in a sombre temple, presented the same outline and the same inanimate look. The peculiarity of the front view of an eye, introduced in a profile, is thus accounted for: it was the ordinary representation of that feature added to a profile, and no allowance was made for any change in the position of the head.

It was the same with drapery: the figure was first drawn, and the drapery then added, not as part of the whole, but as an accessory; they had no general conception, no previous idea of the effect required to distinguish the warrior or the priest, beyond the impressions received from costume, or from the subject of which they formed a part; and the same figure was dressed according to the character it was intended to perform. Every portion of a picture was conceived by itself, and inserted as it was wanted to complete the scene; and when the walls of the building, where a subject was to be drawn, had been accurately ruled with squares, the figures were introduced, and fitted to this mechanical arrangement. The members were appended to the body, and these squares regulated their form and distribution, in whatever posture they might be placed.

Thus then, as Diodorus observes * of Egyptian statues, various portions of the same figure might be made by several artists in different places, the style and attitude having been previously agreed upon, which when brought together, would necessarily agree, and form a complete whole.

As long as this conventional system continued, no great change could take place, beyond a slight variation in the proportions, which at one period became more elongated, particularly in the reign of the second Remeses; but still the general form and character of the figures continued the same, which led to the remark of Plato, "that the pictures and statues made ten thousand years ago are in no one particular better or worse than what they now make." † And that they were still bound by the same regulations, which prohibited all change in these matters, even to the latest times, is evident

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* Diod. i. 98. This, I believe, never to have been done by the Egyptians, because their statues were all of one piece. He mentions a Greek statue of Apollo of Samos, made in two pieces, by Telecles and Theodorus, at Samos and Ephesus.

† Plato, 2d Book of Laws.

from the sculptures of the monuments erected when Egypt had long been a Roman province. All was still Egyptian, though of a bad style; and if they then attempted to finish the details with more precision, it was only substituting ornament for simplicity; and this love of minuteness plainly indicated a deficiency of taste, the natural consequence of the decadence of art.

In the composition of modern paintings three objects are required, one main action: one point of view: and one instant of time: and the proportions and harmony of the parts are regulated by perspective; but in Egyptian sculpture these essentials were disregarded: every thing was sacrificed to the principal figure; its colossal dimensions pointed it out as a centre to which all the rest was a mere accessory; and, if any other was made equally conspicuous, or of equal size, it was still in a subordinate station, and only intended to illustrate the scene connected with the hero of the piece.

In the paintings of the tombs greater licence was allowed in the representation of subjects relating to private life, the trades, or the manners and occupations of the people; and some indication of perspective in the position of the figures may occasionally be observed: but the attempt was imperfect, and, probably, to an Egyptian eye, unpleasing; for such is the force of habit, that even where nature is copied, a conventional style is sometimes preferred to a more accurate representation.

In the battle scenes on the temples of Thebes, some of the figures representing the monarch pursuing the flying enemy, despatching a hostile chief with his sword, and drawing his bow, as his horses carry his car over the prostrate bodies of the slain, are drawn with much spirit, and the position of the arms gives a perfect idea of the action which the artist intended to portray; still, the same imperfections of style, and want of truth are observed; there is action, but no sentiment, expression of the passions, or life in the features; it is a figure ready formed, and mechanically *varied* into movement; and whatever position it is made to assume, the point of view is the same: the same profile of the human body with the anomaly of the shoulders seen in front, and attached as a separate though component part of the whole figure.

Limited to such a conventional mode of drawing, it was in vain for the Egyptian artists to aspire to that degree of excellence attained by the Greeks, unfettered by prejudice, and allowed to imitate the beauties of nature; much less could they arrive at that degree of feeling which formed taste, and called forth the poetry of the mind: their imaginative powers were checked; they were forced to remain contented with the models already before them; and no new conceptions were elicited, or required.

In the representation of animals, they appear not to have been restricted to the same rigid style; but genius once cramped can scarcely be expected to make any great effort to rise, or to succeed in the attempt; and the same union of parts into a whole, the same preference for profile are observable in these as in the human figure. Seldom did they attempt to draw the face in front, either of men or animals; and when this was done, it fell far short of the profile, and was composed of the same juxtaposition of parts. It must, however, be allowed, that in general the character and form of animals, were admirably portrayed; the parts were put together with greater truth; and the same licence was not resorted to as in the shoulders and other portions of the human body. Nor will I deny that great life and animation are given to the antelope, and many wild beasts, in the hunting scenes of the Theban tombs, or refuse my assent to the observation of Madame de Staël*, "Les sculpteurs Egyptiens saisissaient avec bien plus de génie la figure des animaux que celle des hommes."

The mode of representing men and animals in profile is primitive, and characteristic of the commencement of art: the first attempts made by an uncivilised people are confined to it; and until the genius of artists bursts forth, this style continues to hold its ground. From its simplicity it is readily understood; the most inexperienced perceive the object intended to be represented; and no effort is required to comprehend it. Hence it is that, though few combinations can be made under such restrictions, those few are perfectly intelligible, the eye being aware of the resemblance to the simple exterior; and the modern uninstructed peasant of

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* Corinne, vol. i. p. 127.

Egypt who is immediately struck with and understands the paintings of the Theban tombs, if shown an European drawing, is seldom able to distinguish men from animals; and no argument will induce him to tolerate foreshortening, the omission of those parts of the body concealed from his view by the perspective of the picture, or the introduction of shadows, particularly on the human flesh.

Bas relief may be considered the earliest style of sculpture. It originated in those pictorial representations, which were the primeval records of a people anxious to commemorate their victories, the accession or the virtues of a king, and other events connected with their history. These were the first purposes to which the imitative powers of the mind were applied; but the progress was slow, and the infant art (if it may be so called) passed through several stages, ere it had the power of portraying real occurrences, and imitating living scenes. The rude drawing of a spear, a sword, a bow, or other weapon, supplied at first the place of the action itself, of which it was a species of hieroglyphic; but in process of time, the outlines of a warrior and a prostrate foe were attempted, and the valour of the prince who had led them to victory was recorded by this simple group.

As their skill increased, the mere allegorical representation was extended to that of a descriptive kind, and some resemblance of the hero's person was attempted; his car, the army he commanded, and the flying enemies, were introduced; and what was at first scarcely more than a symbol, assumed the more exalted form and character of a picture. Of a similar nature were all their historical records, and these pictorial illustrations were a substitute for written documents. Sculpture, indeed, long preceded letters, and we find that even in Greece, to describe, draw, engrave, and write, were expressed by the same word, *γϱαφειν*.

The want of letters, and the inability to describe an individual, his occupations, or his glorious actions, led them in early ages to bury with the body some object which might indicate the character of the deceased. Thus, warriors were interred with their arms*; artisans with the implements they had used; the oar was placed over the sailor; and pateræ, and other utensils connected with his office, or the emblems of the deity in whose service he had been employed, were deposited in the sepulchre of a priest. In those times we find no inscription mentioned; a simple mound was raised over a chief, sometimes with a στυλος or rough stone pillar, placed upon it, but no writing: and when, at a later period, any allusion to the occupations of the deceased was attempted, a rude allegorical emblem, of the same nature as the early historical records before alluded to, was engraved on the levelled surface of the stone.

Poetry and songs also supplied the want of writing, to record the details of events; and tradition handed down the glorious achievements of a conqueror, and the history of past years, with the precision and enthusiasm of national pride. The poetry was recited to the sound of music, whence the same expression often implied the ode and the song; and as laws were recorded in a similar manner, the word νομος signified, as Aristotle observes, both a law and a song.

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* Virgil Æn. vi. 233., at the tomb of Misenus:
"——— Suaque arma viro, remumque, tubamque."

Sculpture dates long before architecture. A simple hut, or a rude house, answer every purpose as a place of abode, and a long time elapses before man seeks to invent what is not demanded by necessity.

Architecture is a creation of the mind: it has no model in nature, and it requires great imaginative powers to conceive its ideal beauties; to make a proper combination of parts; and to judge of the harmony of forms altogether new, and beyond the reach of experience. But the desire in man to imitate, and to record what has passed before his eyes, in short, to transfer the impression from his own mind to another, is natural in every stage of society: and however imperfectly he may succeed in representing the objects themselves, his attempts to indicate their relative position, and to embody the expression of his own ideas, are a source of the highest satisfaction.

As the wish to record events gave the first, religion gave the second impulse to sculpture. The simple pillar of wood or stone*, which was originally chosen to represent the deity, afterwards assumed the human form, the noblest image of the power that created it; and the memorial of the primitive substitute for a statue is curiously preserved in the Greek name *κιων*, implying a column and an idol. Pausanias * thinks that "all statues were in ancient times of wood, particularly those made in Egypt;" but this must have been at a period so remote as to be far beyond the known history of that country; though it is probable that when the arts were in their infancy, the Egyptians were confined to statues of that kind; and they occasionally erected wooden figures in their temples, even till the times of the latter Pharaohs.

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* Lucan mentioning the statues of the gods of Massilia, says,

"Simulacra mista deorum
Arte carent, cœcisque extant informia truncis."

And Tacitus describes those of the Germans as "è stipitibus et impolito robore." De Mor. Germ.

Long after men had attempted to make out the parts of the figure, statues continued to be very rude; the arms were placed directly down the side to the thighs, and the legs were united together; nor did they pass beyond this imperfect state in Greece, until the age of Dædalus. The Egyptians, at the latest periods, continued to follow the imperfect models of their early artists, and grace and feeling were for ever prevented from forming a feature of their sculpture: and though they made great progress in other branches of art, though they evinced considerable taste in the forms of their vases, their furniture, and even in some architectural details, they were for ever deficient in the combination of ideal beauty with the natural position of parts in the human figure.

One great impediment to the advancement of the statuary's art in Egypt, was the unvarying posture of the figures, which were always in a state of repose, or in a position that only required the limbs to be straight, without any attempt at action, or, indeed, any indication of life: they were really *statues* of the person they represented, not the person "living in marble," in which they differed entirely from those of Greece. No statue of a warrior was sculptured in the varied attitudes of attack and defence, no wrestlers, no *discobolus*, no pugilist exhibited the grace, the vigour, or the muscular action of a man; nor were the beauties, the feeling, and the elegance of female forms displayed in stone: all was made to conform to the same invariable model, which confined the human figure to a few conventional postures.

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* Pausanias, lib. ii. c. xix.

A sitting statue, whether of a man or woman, was represented with the hands placed upon the knees, or held across the breast; a kneeling figure sometimes supported a small shrine or sacred emblem; and when standing, the arms were placed directly down the sides to the thighs, one foot being advanced beyond the other, as if in the attitude of walking, but without any attempt to separate the legs.

"The feet," says Winkelmann*, "of the Egyptian differ from those of the Greek statues, in being more flat and broad, and in having the toes perfectly straight, with the joints as little indicated as in the fingers, and a gradual diminution in their length; nor is the little toe curved or bent under, as in those of the Greeks." This last remark is just, and their mode of representing it accords with what they saw in nature; but the length of the toes of an Egyptian foot do not undergo a gradual diminution, the second being invariably made longer than any other, which too agrees with the natural form.

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* Winkelmann, i. p. 110.

The reason of this uniformity I have already explained; and it is probable that, if their genius had not been cramped by superstitious prejudice, the Egyptians would have excelled in painting and sculpture; and the imitation of the human figure have kept pace with their advancement in other points.

No accidents, arising from the consequences of invasion, or from any other cause, were ever capable of changing their fixed reverence for prescribed forms; nor do we find, after the Greek, and Roman conquests, that any deviation from established custom was tolerated; or that any innovation was introduced from communication with those foreigners, however superior their art, and however evident its resemblance to the originals which nature daily presented to their eyes. After the accession of the Ptolemies, Greek art became well known in Egypt, and every opportunity was given to their artists to improve from the best models: but no change was effected by this intercourse with the Greeks; and when Adrian wished divine honours to be paid to his favourite Antinoüs, and statues to be erected to his memory, no form was admitted but that which religious usage had established, and Egyptian models prescribed.

Though the general character of painting and sculpture continued the same, and a certain conventional mode of representing the human figure was universally adopted throughout the country, which was followed by every artist through successive ages, from the earliest Pharaonic era until the religion of Egypt was supplanted by the final establishment of Christianity, it is reasonable to suppose that several styles were introduced, and that the genius of artists varied considerably during that lengthened period. Plato's assertion is therefore to be taken in a limited and general sense, signifying that the Egyptians followed the same conventional forms, and that no nearer approach to the beau ideal of the human figure was made at one period than another. This is perfectly true; but every eye accustomed to Egyptian drawing readily perceives the difference between subjects executed during the Augustan age of art, the reigns of Remeses the Great and his father Osirei, and those of a Ptolemaic epoch. Truth may be wanting, as it necessarily must be where nature is not copied; but there are a grace and a boldness in the outline, as well as in the execution of the sculptures of the former period, which at once indicate the work of superior genius.

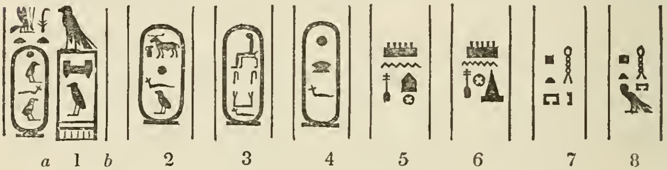
The hieroglyphics on the obelisks of that epoch proclaim the same fact, and, in architecture, the temples erected by the great Remeses, far surpass in elegance and grandeur, in harmony of proportion and simplicity of style, the monuments of any previous or subsequent era. It cannot, however, be denied that, in the time of Osirtasen and at the commencement of the 18th dynasty, Egyptian art flourished greatly, and monuments of that age, also, claim our admiration for taste, simplicity, and symmetry of details. And if some fanciful innovations were introduced in the buildings of the third Thothmes, they are attributable to momentary caprice, and not to be looked upon as a change in the architecture of that period. This I shall have occasion to mention hereafter.

The paintings at Beni Hassan are certainly far inferior to those of the age of Remeses, or of the early part of the 18th dynasty; but the style of the hieroglyphics on some other monuments of the Osirtasen epoch, as the obelisk of Heliopolis, show that sculpture had greatly advanced at that remote period: and if historical bas-reliefs had been preserved, we might discover still more to prove the skill of the artists of the same era.

Few paintings or sculptures remain of an age prior to the accession of Osirtasen I., whom I suppose to have been the contemporary of Joseph, and to have ascended the throne about the year 1740. The tombs in the vicinity of the pyramids, and those I discovered hewn in the rock near Qasr e'Syád, the ancient Chenoboscion, are certainly anterior to the grottoes of Beni Hassan; and the style of the masonry as well as the names of the kings found there, show that the former were the places of sepulture of individuals, who lived in the time of Suphis, and his immediate successors. They, therefore, date about the year 2090 and 2050, B. C., upwards of a century before the arrival of Abraham in Egypt, if, as I suppose, the patriarch came to that country during the reign of Apappus.

It is evident that the tombs, built of stone, which stand in the area before and behind the great pyramid*, were erected after it had been commenced, if not completed, as their position is made to conform to that momument; and that those hewn in the rock at the same place were not of an older period, is shown by the style of the sculptures, and the names of the same kings.

Among these we evidently perceive Suphis, or as the hieroglyphics write it, Shofo, or Khof, a name easily converted into Suphis or Cheops, by adding *s*, the Greek termination.† But it is difficult, as I have already observed‡, to refer them to their proper epoch, or to fix their relative position in the list of kings. Nor can we decide whether the two first names here introduced, are both of Suphis, or if the second is of the founder of the other



a, the name of Shofo, or Suphis.
5, 6, the name of Memphis; 7, 8, (Memphis, or) Pthah-eï, the abode of Pthah.
No. 380. *From the Tombs near the Pyramids.*

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* It is remarkable that Memphis is styled the land of the pyramid. Its Egyptian name in the hieroglyphics is Menofri, in Coptic Memfi, Manfi, Membe, Panoufi, or Mefi, being probably corrupted from Mañ-nofri, "the abode of good," or as Plutarch calls it, "the haven of good men." It was also called Pthah-eï, the abode of Pthah. *Vide* wood-cut, No. 328., *figs.* 5, 6, 7, 8.

† As I have observed in Vol. I. p. 41. note 4.

‡ Vol. I. p. 19.

pyramid, whose name *Sen*-Suphis signifies the *brother* of Suphis; though they certainly appear to be of different kings, who lived about the same epoch.

They occur again at Mount Sinai, and the former has the banner or square title, given in the wood-cut *, which would satisfactorily decide this question, if it should ever be found with the other name. For these square banners, as I have already shown in a former work †, relate to the kings and not to the deities: and though the learned and ingenious Champollion expressed a different opinion in his "Précis," ‡ he was afterwards convinced of this fact, which is now universally admitted.

The other names in these tombs are of the same remote period; and though there is no positive proof of their relative antiquity, we may conclude they belonged to the immediate successors of Suphis and his brother. It is remarkable that in some

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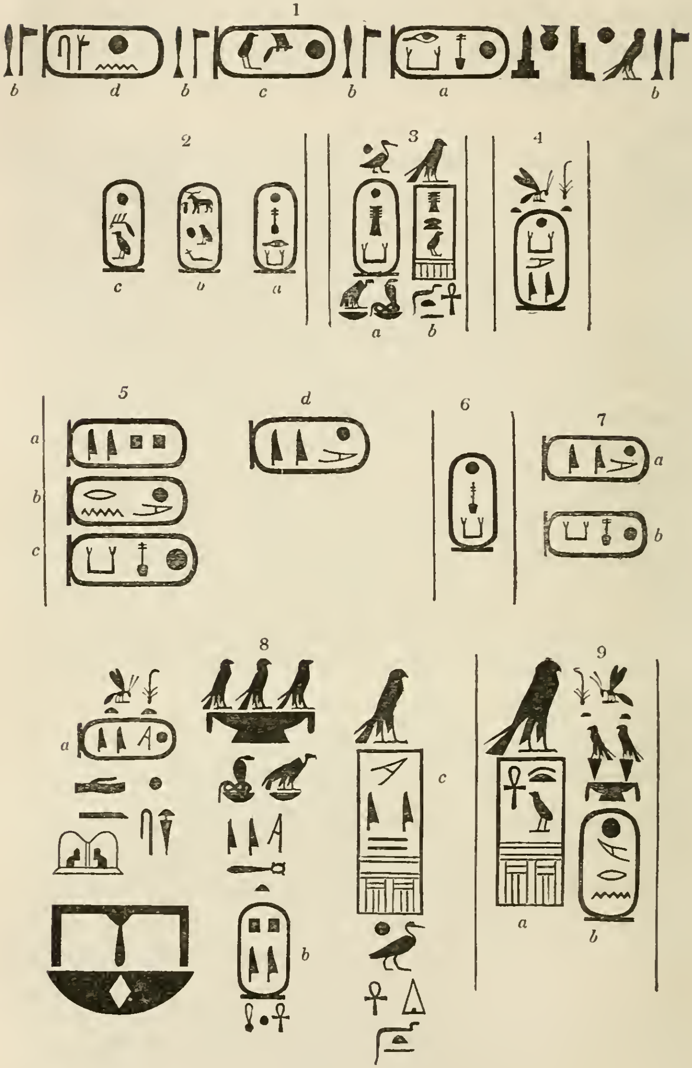
* *Vide* wood-cut, No. 380. *fig.* 1. *b.*

† Materia Hierog. Extracts from Hieroglyphical Subjects, p. 7.: — "One more remark I have to offer, which, I confess, is not at all consonant with the ideas of Dr. Young and M. Champollion; that the square beneath the hawk, containing sometimes a bull and arm, sometimes other devices, does not refer to the god in whose honour the monument was raised, but to the king, whose name *always* follows it; and to this I have been led by the following circumstance: — wherever a king has erased the name of a predecessor, and inscribed his own in its stead, the hieroglyphics in this square have also been erased and changed: they cannot, therefore, refer to the god to whom the building was erected; otherwise the dedication, and other sculptures containing his name would *also* be altered throughout the same monument; we should likewise find all the different names of kings in the same temple, preceded by a square containing the same devices, as relating to the deity of that temple, which is *not* the case." I have also shown (in p. 8.) that the *κρατερος Απολλων* is Phrah, or Pharaoh, the king in the character of the sun. *Vide* Egypt and Thebes, p. 5.

‡ Précis du Systême Hieroglyphique, p. 152.



No. 381. Names of Ancient Kings.

Fig. 1, 2, at the tombs near the Pyramids. 3, at Saqqâra and Mount Sinai. 4, at E'Sioot. 5, 6, at Chenoboscion. *a* has been cut over *d*. *a*, *b*, *c*, seem to have reigned in succession. 7, at Wady Maghâra, near Mount Sinai. 8, 9, on the Kossayr road. The characters *b. b.* in fig. 1. signify "priest."

instances they are preceded by, and in others destitute of, regal titles, and sometimes they appear to have the word 'priest' prefixed to them, like those at Chenoboscion. Three of the names, however, are so arranged, that we may suppose they indicate the order in which the kings ruled, though the arrangement is different in another part of the same tomb, where the name of Suphis, or of Sensuphis, intervenes between two of them.*

At Saqqara other tombs of the same early period occur, and some of the grottoes of E'Sioot probably date long before the accession of Osirtasen. The former have a name, which, like most of these, bears in its simplicity the character of great antiquity, and in the latter is that of another ancient monarch; but neither of them† can be traced in the chamber of kings at Karnak.

The most interesting, after those at the pyramids, are the names in the grottoes of Chenoboscion, not only from their antiquity "which," as I have observed‡, "may vie with that of any other catacomb or monument in Egypt, if we except the pyramids and the tombs in their vicinity," but from their being placed in chronological order, and from the circumstance of a king having erased one of them, and introduced his own name in its stead.§ The title applied to them is not 'king,' 'but priest,' though the name is enclosed in an oval, the symbol of royalty; and that they really had the rank and appellation of king is shown by the same names occurring elsewhere with the usual royal prefix, and even the square title.

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* Wood-cut, No. 381., *fig*. 1. *a* and *c*, and *fig*. 2., where *b* comes between *a* and *c*.

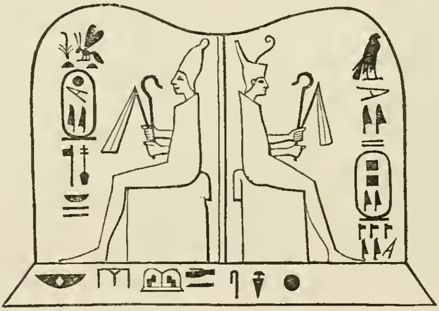
† *Figs*. 3 *a* and 4.

‡ Egypt and Thebes, p. 401, 402.

§ *Fig*. 5., *a* and *c*, and *d* cut over by *a*.

The first* of these is the name to which I alluded as having been erased to admit that of another monarch: it reads Remai, or "the beloved of the sun." The other is Papi†, a name which occurs in Egyptian history, being borne, according to Manetho, by the father of the priest Amenophis who lived in the time of the shepherds.‡

Several tablets§ and monumental records of king Papi have been preserved; and on the rocks of the Kossayr road, his name occurs in the same inscription with that of Remai, who is elsewhere shown to have reigned sixteen years. It is remark-



No. 382. — Figures of kings wearing the crown of Upper and of Lower Egypt, with the names Remai and Papi. *Kossayr Road.*

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* *Vide* Wood-cut No. 381. *fig.* 5 *a.*

† *Vide* Wood-cut, No. 381. *fig.* 5 *d.*

‡ Joseph. *contra* Ap. i. 26. *Vide* Cory's valuable collection of "Ancient Fragments," p. 176.

§ There is one in the British Museum.

able, that the two princes appear seated on their thrones in the hall of assembly, wearing, one the crown of the upper, the other that of the lower country *; showing either that they were contemporary sovereigns, one ruling at Thebes, and the other at Memphis, or that Papi was the phonetic nomen of Remai, and that they were the same monarch.

The former is a point which has been long contested in Egyptian history. Manetho evidently alludes to contemporary dynasties, when he speaks of the kings of the Thebaid and the rest of Egypt uniting in a common cause against the shepherds †; and some chronologers have endeavoured to account for the long list of Egyptian kings, by supposing that they ruled at the same time in different parts of the country. This opinion was suggested by the learned Sir John Marsham; but, though correct, as far as it applies to the early epochs of their history, there is sufficient evidence to prove that from the time of Osirtasen, the sovereignty of Upper and Lower Egypt continued to be vested in one person, whether the royal residence was at Thebes, Memphis, or Saïs; and even if Papi has erased the name of his contemporary Remai, he may only have reunited the two crowns, which had been previously separated; for that Menes was sole monarch of all Egypt appears to have been universally allowed; and the division of the kingdom was

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* *Vide* wood-cut, No. 382.; also wood-cut, No. 381., *figs*. 5 and 8.

† *Vide* Cory, p. 171.

perhaps owing to the preference of his son Athothes for the new capital founded by his father, which caused the court to be transferred to Memphis.

In noticing these ancient names, it is necessary to repeat a remark I have previously had occasion to make*, that the custom of affixing a *prænomen* to the phonetic *nomen* was not introduced in early times, and that Menes and many other kings had merely one oval, containing their name, preceded by the title 'king,' 'lord of the world,' or other regal prefix. Remai and Papi might therefore be different kings, each with a single oval; and, if they really are the same person, we have probably here the first instance of the introduction of a *nomen*; for there can be no doubt of the great antiquity of these names, from the appearance of the grottoes and monuments, where they occur, and the many collateral facts connected with the succeeding monarchs.

It may not be irrelevant to suggest that the hieroglyphics forming the name of Papi may also read Apap, or Aphoph†, the Apophis, or Apappus, of Manetho and Eratosthenes. The era at which he lived, about a century after the time of Suphis, well accords with that of Papi; and if this be admitted, we have evidence of the style of sculpture at another fixed period, the arrival of Abraham in Egypt.

Both the names of Papi and Remeren are found in the chamber of kings at Karnak.

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* *Vide* Mater. Hierogl. Extracts, p. 9.

† Aphôph is "a giant" in Coptic. It is translated "Maximus." *Vide* Vol. I. p. 28. 30. 37. 42.

I have entered thus into detail upon the antiquity of these kings, with a view to ascertain a period, when the art of painting and sculpture was in a less advanced state than under the kings of the 18th dynasty. In the tombs near the pyramids, and those of Chenoboscion, we find the same agricultural and other scenes represented, which usually occur in the sepulchral chambers of the Theban necropolis, and this gives an opportunity of judging of the comparative state of art at those two periods, which are separated by an interval of from five to six hundred years. The mode of treating those subjects is certainly very inferior even to that of the Osirtasen era, particularly at Chenoboscion; but some allowance must be made for sculptures executed by provincial artists, who had not attained the excellence of those of Thebes and Memphis. And the same apology may be offered for he paintings of Beni Hassan.

At the tombs of the pyramids we likewise observe an inferiority of style, compared with the elegance and taste of the 18th dynasty; and the epochs of Suphis, of Osirtasen, of the early part of the 18th dynasty, and of Osirei and Remeses the Great, may be looked upon as the four known gradations, through which the arts passed from mediocrity to excellence.

After the reign of Remeses the Great the arts remained stationary; the peaceful or inactive reigns of his successors offered little encouragement to sculpture, and few opportunities were given to artists to improve, or even to exercise their talents. The ambition, the warlike spirit, or the indignation of the third Remeses, roused by the rebellion of the conquered provinces of Asia, which had been subdued and rendered tributary by his victorious predecessor, once more awakened the dormant genius of his country; and, as it frequently happens that great military events, as well as internal convulsions, produce great developement of talent, we are not surprised that the success which attended his arms should have benefited the arts. The same remark applies, and in a greater degree, to the glorious era of Osirei and his son; and at no period of Egyptian history did the arms of the Pharaohs attain greater celebrity, or the arts reach a higher degree of perfection than in the reign of the Great Remeses.

As soon as the third Remeses had returned from his successful expedition into Asia, sculpture and painting were called upon to commemorate the triumphs he had gained, and to record the victories of his country on the walls of the splendid edifices of Thebes. The sculptures in the palace-temple of Medeenet Haboo, erected by this monarch, display a degree of spirit which is only surpassed in those of his great namesake and predecessor; and so little do they fall short of the style of that period, that few who have not entered into the real feeling of Egyptian drawing, can observe in what their inferiority consists.

In order that the reader may form some idea of the nature of the subjects represented on the walls of the Egyptian temples, and the profusion of painted sculptures with which they were ornamented, I shall introduce a description of the palace-temple of Remeses III. at Medeenet Haboo, from my 'Egypt and Thebes.'*

" On the east, or north-east wall (of the inner area), Remeses is borne in his shrine or canopy, seated on a throne, ornamented with the figures of a lion and a sphinx, which is preceded by a hawk.† Behind him stand two figures of Truth ‡ and Justice, with outspread wings. Twelve Egyptian princes, sons of the king §, bear the shrine; officers || wave flabella around the monarch; and others, of the sacerdotal order, attend on either side, carrying his arms and insignia. Four others follow; then six of the sons of the king, behind whom are two scribes and eight attendants of the military class, bearing stools and the steps of the throne.

" In another line are members of the sacerdotal order, four other of the king's sons, fan-bearers, and military scribes; a guard of soldiers bringing up the rear of the procession. Before the shrine, in one line, march six officers bearing sceptres and other insignia; in another, a scribe reads aloud the contents of a scroll he holds unfolded in

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[*] Egypt and Thebes, p. 61. et seq.

[†] The emblem of the king as Phrah (Pharaoh).

[‡] This refers to the double character of this goddess, my authority for whose name I have given in my Materia Hierog. p. 45.

[§] They are always distinguished by a badge appended from their head-dress, inclosing, probably, the lock of hair, usually denoting son or child.

[||] Probably the Pterophori.

his hand, preceded by two of the king's sons and two distinguished persons of the military and priestly orders. The rear of both these lines is closed by a pontiff[*], who, turning round towards the shrine, burns incense before the monarch; and a band of music, composed of the trumpet, drum, double-pipe, and other instruments, with choristers, forms the van of the procession.

The king, alighted from his throne, officiates as priest before the statue of Amun Khem, or Amunre *generator;* and, still wearing his helmet[†], he presents libations and incense before the altar, which is loaded with flowers, and other suitable offerings. The statue of the god, attended by officers bearing flabella[‡], is carried on a palanquin, covered with rich drapery, by twenty-two priests; behind it follow others, bringing the table and the altar of the deity. Before the statue is the sacred bull, followed by the king on foot, wearing the cap of the "lower country." Apart from the procession itself stands the queen, as a spectator of the ceremony; and before her, a scribe reads a scroll he has unfolded. A priest turns round to offer incense to the white bull; and another, clapping his hands, brings up the rear of a long procession of hieraphori, carrying standards, images, and other sacred emblems; and the foremost bear the statue of the king's ancestors.

This part of the picture refers to the *coronation* of the king, who, in the hieroglyphics, is said to have 'put on the crown of the upper and lower countries;' which the birds, flying to the four sides of the world, are to announce to the gods of the south, north, east, and west.* Such appears to be the meaning of this ceremony †, rather than the *triumph* of the king; and the presence of Remeses, wearing for the *first time* the above mentioned crown, and the great analogy between this and part of the text of the Rosetta stone, fully justify this opinion.

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[*] Not the "eldest son of the king," as M. Champollion supposes.

[†] *Vide* Herodot. ii. 151.

[‡] The larger of these are, in fact, umbrellas; the smaller ones fans or fly-flaps. Flabella of a similar kind are carried before the pope at the present day.

"In the next compartment, the president of the assembly reads a long invocation, the contents of which are contained in the hieroglyphic inscription above; and the six ears of corn ‡ which the king, once more wearing his helmet, has cut with a golden sickle, are held out by a priest towards the deity. The white bull and images of the king's ancestors are deposited in his temple, in the presence of Amun Khem, the queen still witnessing the ceremony, which is concluded by an offering of incense and libation, made by Remeses to the statue of the god.

"In the lower compartment, on this side of the temple, is a procession of the arks of Amunre, Maut, and Khonso (the Theban triad) which the king, whose ark is also carried § before him, comes to meet. In another part, the gods Abtaut and Hat pour alternate emblems of life and power over the king; and, on the south wall, he is introduced by several divinities into the presence of the patron deities of the temple.

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* I am indebted for the construction of this part of it to M. Champollion's letter.

† I hope to have an opportunity, at some future period, of giving a copy of this interesting subject, which the contracted dimensions of this work prevent my doing.

‡ A fit emblem for an agricultural people.

§ Conf. Rosetta stone.

"In the upper part of the west wall, Remeses makes offerings to Pthah Sokari and to Kneph; in another compartment, he burns incense to the ark of Sokari; and, near this, is a tablet relating to the offerings made to the same deity. The ark is then borne by sixteen priests, with a pontiff and another of the sacerdotal order in attendance.

"The king afterwards joins in another procession, formed by eight of his sons and four chiefs, behind whom two priests turn round to offer incense to the monarch. The hawk, the emblem of the king, or of Horus, precedes them; and eighteen priests carry the sacred emblem of the god Nofri Atmoo, which usually accompanies the ark of Sokari.

"On the south wall, marches a long procession composed of hieraphori, bearing different standards, thrones, arks, and insignia, with musicians who precede the king and his attendants. The figure of the deity is not introduced, perhaps intimating that this forms part of the religious pomp of the corresponding wall: and, from the circumstance of the king here wearing the *pshent*, it is not impossible it may also allude to his coronation.

"The commencement of the interesting historical subjects of Medeenet Haboo is in the south-west corner of this court, on the inner face of the tower. Here Remeses standing in his car, which his horses at full speed carry into the midst of the enemy's ranks, discharges his arrows on their flying infantry. The Egyptian chariots join in the pursuit; and a body of their allies assist* in slaughtering those who oppose them, or bind them as captives. The right hands of the slain are then cut off as trophies of victory.

" The sculptures on the west wall are a continuation of the scene. The Egyptian princes and generals conduct the 'captive chiefs' into the presence of the king. He is seated at the back of his car, and the spirited horses are held by his attendants on foot. Large heaps of hands are placed before him, which an officer counts, one by one, as the other notes down their number on a scroll; each heap containing three thousand, and the total indicating the returns of the enemy's slain. The number of captives, reckoned 1000 in each line, is also mentioned in the hieroglyphics above, where the name of the Rebo points out the nation against whom this war was carried on. Their flowing dresses, striped horizontally with blue or green bands on a white ground, and their long hair and aquiline nose, give them the character of an Eastern nation in the vicinity of Assyria and Persia, as their name reminds us of the Rhibii of Ptolemy, whom he places near the Caspian, and the north bank of the Oxus. . . . A long hieroglyphic inscription is placed over the king; and a still longer tablet, occupying a great part of this wall, refers to the exploits of the Egyptian conqueror, and bears the date of his fifth year.

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* The same whom this monarch is represented as having vanquished in another battle scene of this temple.

" The suite of this historical subject continues on the south wall. The king, returning victorious to Egypt, proceeds slowly in his car*, conducting in triumph the prisoners he has made, who walk beside and before it, three others being bound to the axle. Two of his sons attend as fan-bearers, and the several *regiments* of Egyptian infantry, with a corps of their allies, under the command of three other of these princes, marching in regular step, and in the close array of disciplined troops accompany their king. He arrives at Thebes, and presents his captives to Amunre and Maut, the deities of the city, who *compliment* him as usual, on the victory he has gained, and the overthrow of the enemy he has 'trampled beneath his feet.'

" On the north wall the king presents offerings to different gods, and below is an ornamental kind of border; composed of a procession of the king's sons and daughters. Four of the former, his immediate successors, bear the asp or basilisk, the emblem of majesty, and have their kingly ovals added to their names. . . . .

" If the sculptures of the area arrest the attention of the antiquary, or excite the admiration of the traveller, those of the exterior of this building are no less interesting in an historical point of view, and the north and east walls are covered with a profusion of the most varied and instructive subjects.

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* *Vide* Plate I. Vol. I. p. 106.

" At the north east extremity of the end wall a trumpeter assembles the troops, who salute the king as he passes in his car. In the first compartment on the east side, Remeses advances at a slow pace in his chariot, attended by fan-bearers, and preceded by his troops. A lion, running at the side of the horses, reminds us of the account given of Osymandyas, who was said to have been accompanied in war by this animal: and another instance of it is met with at E'Dayr, in Nubia, among the sculptures of the second Remeses.

" Second compartment. — He continues his march*, his troops leading the van, and a trumpeter summons them to form for the attack.

" Third compartment. — The Rebo await the Egyptian invaders in the open field; the king presses forward in his car, and drawing his bow, gives the signal for the attack. Several regiments of Egyptian archers, in close array, advance on different points and harass them with showers of arrows. The chariots rush to the charge; and a body of Asiatic allies † maintain the combat hand to hand, with the Rebo, who are *at length* routed, and fly before their victorious aggressors. Some thousands are left dead on the field, whose tongues‡ and hands, being cut off, are brought by the Egyptian soldiers as proofs of their success. Three thousand five hundred and thirty-five hands and tongues form part of the registered returns; and two other heaps, and a third of tongues, containing each a somewhat larger number, are deposited under the superintendence of the chief officers, as trophies of victory. The monarch then alights from his chariot, and distributes rewards to his troops.

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* This evidently denotes the distance marched by the Egyptians before they reached the enemy's country.

† They are the Sha . . . a maritime people, whose features and high-furred caps particularly denote their Asiatic origin; and a large amulet, suspended from their neck, reminds us of a custom very usual among the nations of the east. *Vide* Vol. I. p. 287. wood-cut, No. 11. *fig.* 2. and p. 365. wood-cut, No. 62. *fig.* 3. *a*, *b*, and *c*.

‡ The Turks, at the present day, cut off the right ear.

" In the next compartment, the king's military secretaries draw up an account of the number of spears, bows, swords, and other arms taken from the enemy, which are laid before them: and mention seems to be made in the hieroglyphics of the horses that have been captured.

" Remeses then proceeds in his car, having his bow and sword in one hand, and his whip in the other, indicating that his march still lies through an enemy's country. The van of his army is composed of a body of chariots; the infantry in close order, preceding the royal car, constitute the centre; and other similar corps form the flank and rear.

" They are again summoned by sound of trumpet to the attack of another Asiatic enemy*; and, in the next compartment, the Egyptian monarch gives orders for the charge of the hostile army, which is drawn up in the open plain. Assisted by their allies, the Shairetana, a maritime people armed with round bucklers and spears, they fall upon the undisciplined troops of the enemy, who, after a short conflict are routed, and retreat in great disorder. The women endeavour to escape with their children on the first approach of the Egyptians, and retire in *plaustra*[*] drawn by oxen.[†] The flying chariots denote the greatness of the general panic, and the conquerors pursue them to the interior of the country. Here, while passing a large morass, the king is attacked by several lions[‡], one of which, transfixed with darts and arrows, he lays breathless beneath his horse's feet; another attempts to fly towards the jungle, but, receiving a last and fatal wound, writhes in the agony of approaching death.[§] A third springs up from behind his car, and the hero prepares to receive it and check its fury with his spear.

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* This people are called Fekkaros by M. Champollion. I am ignorant of the force of the first character, and of his reasons for adopting the F. May they not be the Tochari? — " a large tribe," according to Ptolemy, on the north-east of Bactria, and at no great distance from the Rhibii. If any of the sculptures of Thebes refer to the rebellion of tne Bactrians, they are here.

"Below this group is represented the march of the Egyptian army, with their allies, the Shairetana, the Sha . . . ., and a third corps, armed with clubs, whose form and character are but imperfectly preserved.[||]

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[*] They were used in Egypt from the earliest times, and are mentioned in Genesis xlv. 19., &c. Strabo also speaks of them, lib. xvii. They are the more remarkable here, as putting us in mind of a custom, very prevalent among some eastern nations, of posting their wagons in the rear when going to battle. The Tartars of later times were noted for this custom.

[†] With the hump of Indian cattle. They seem to have been formerly very common in Egypt also, as they are at present in Kordofán and Sennár.

[‡] One modern author has supposed this to represent a lion chase, another has discovered in it the lion of Osymandyas, which *assisted* him in battle. We have frequently known sportsmen shoot their *own* dogs, but nothing justifies a similar opinion with regard to the king on this occasion.

[§] The position of the lion is very characteristic of the impotent fury of the disabled animal. Of the third little is seen but part of the forepaw: the attitude of the king supplies the rest.

[||] *Vide suprà*, Vol. I. p. 287.

"The enemy, having continued their rapid retreat, take refuge in the ships of a maritime nation*, to whose country they have retired for shelter. The Egyptians attack them with a fleet of galleys . . . . and bearing down their opponents, succeed in boarding them and taking several prisoners. One of the hostile gallies is upset; and the slingers in the tops, with the archers and spearmen on the prows, spread dismay among the few who resist. The king, trampling on the prostrate bodies of the enemy, and aided by a corps of bowmen, discharges from the shore a continued shower of arrows; and his attendants stand at a short distance with his chariot and horses, and await his return. Below this scene, the conquering army leads in triumph the prisoners of the two nations they have captured in the naval fight, and the amputated hands of the slain are laid in heaps before the military chiefs. . . . . In the next compartment, the king distributes rewards to his victorious troops, and then proceeding to Egypt, he conducts in triumph the captive Rebo and Tokkari, whom he offers to the Theban triad, Amun, Maut, and Khonso.

"In the compartments above these historical scenes, the king makes suitable offerings to the gods of Egypt; and, on the remaining part of the east wall, to the south of the second propylon, another war is represented.

"In the first picture, the king alighted from his chariot, armed with his spear and shield, and trampling on the prostrate bodies of the slain, besieges the fort of an Asiatic enemy, whom he forces to sue for peace. In the next, he attacks a larger town surrounded by water. The Egyptians fell the trees in the woody country which surrounds it, probably to form testudos and ladders for the assault. Some are applied by their comrades to the walls; and, while they reach their summit, the gates are broken open, and the enemy are driven from the ramparts, or precipitated over the parapet by the victorious assailants, who announce by sound of trumpet the capture of the place.

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* The Shairetana; part of the same people who joined the Egyptians as allies in this war. The expression 'maritime people' may imply merely that they lived near a large lake.

"In the third compartment, on the north face of the first propylon, Remeses attacks two large towns, the upper one of which is taken with but little resistance, the Egyptian troops having entered it and gained possession of the citadel. In the lower one, the terrified inhabitants are engaged in rescuing their children from the approaching danger, by raising them from the plain beneath to the ramparts of the outer wall. The last picture occupies the upper or north end of the east wall, where the king presents his prisoners to the gods of the temple. The western wall is covered by a large hieroglyphical tablet, recording offerings, made in the different months of the year, by Remeses III."

This may serve to give an idea of the profusion of sculpture on the walls of an Egyptian temple. The whole was coloured; and this variety served as a relief to the otherwise sombre appearance of massive straight walls, which formed the exterior of Egyptian temples. All the architectural details were likewise painted; and though a person unaccustomed to see the walls of a large building so decorated, might suppose the effect to be far from pleasing, no one who understands the harmony of colours will fail to admit that they perfectly understood their distribution and proper combinations, and that an Egyptian temple was greatly improved by the addition of painted sculptures.

In a work of so limited a scale as the present, it is impossible to give an adequate notion of a large temple, whose details are so made up, or to give the general effect of this kind of *clair-obscur;* but an idea may be conveyed of some of the parts, from the capitals of the columns, which I have introduced in the frontispiece of this volume.

The introduction of colour in architecture was not peculiar to the Egyptians: it was common to the Etrurians, and even to the Greeks. For though the writings of ancient authors afford no decided evidence of the practice in Greece, and the passages adduced in support of it from Vitruvius*, Pliny†, and Pausanias‡, are neither satisfactory, nor conclusive, the fact of colour having been found on the monuments of Attica and Sicily is so well authenticated, that no doubt can be entertained of certain parts, at least, of Greek temples, of the oldest and even of the best periods, having been painted.

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* Vitruv. iv. 2. "Tabellas ita formatas, uti nunc fiunt triglyphi, contra tignorum præcisiones in fronte fixerunt, et *eas cerâ cæruleâ depinxerunt.*" *Vide* also lib. vii. c. 9. and c. 5., where he shows the bad taste of the Romans in their mode of painting their houses.

† Plin. xxxvi. 23. "In Elide ædes est Minervæ, in qua frater Phidiæ Pannæus, tectorium induxit lacte et croco subactum." *Vide* also lib. xxxv. c. 8. where he again mentions Pannæus; and, after saying Phidias was originally a painter, adds that Pannæus assisted in painting the figure of Olympian Jupiter.

‡ Pausan. lib. v. Elis. c. xi. He mentions the works of the brother of Phidias, whom he calls Panénus.

In the temple of Theseus at Athens, vestiges of colours are seen on the ground of the frieze, on the figures themselves, and on the ornamental details.* The Parthenon presents remains of painting on some members of the cornice, and the ground of the frieze, above the interior of the peristyle, containing the reliefs of the Panathenaic procession, was blue. The propylæa of the Acropolis, the Ionic temple on the Ilissus, and the Choragic monument of Lysicrates also offer traces of colour; and vestiges of red, blue, and green, have been discovered on the metopes of a temple at Selinus in Sicily, by Messrs. Angell and Harris, who excavated and examined the site of that ancient city in 1823. In one of these, the figure of Minerva has the eyes and eyebrows painted†; her drapery, and the girdle of Perseus are also ornamented with coloured devices, and the whole ground of this and two other of the metopes is red.

Red and blue seem to have been generally used for the ground; and these two, with green, were the principal colours introduced in Greek architecture, many members of which were also gilt, as the shields, guttæ, and other prominent details; but there is, as yet, no proof of the flesh of statues or bas-reliefs having been painted, and many suppose that the shafts of columns were always white, the coloured parts being confined to the entablature and pediment.

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* *Vide* Transactions of The Institute of British Architects, on the polychromy of Greek architecture, translated from the German of Kugler by W. R. Hamilton Esq. p. 85. et seq.

† *Vide* the Sculptured Metopes of Selinus, by Messrs. Harris and Angell, p. 49.

In Egyptian buildings, indeed, it sometimes happened, that the shafts of columns were merely covered with white stucco, without any ornament, and even without the usual line of hieroglyphics; and the same custom of coating certain kinds of stone with stucco was common in Greece. The Egyptians always put this layer of stucco, or paint, over stone, whatever its quality might be, and we are surprised to find the beautiful granite of obelisks and other monuments concealed in a similar manner; the sculptures engraved upon them being also tinted either green, blue, red, or other colour, and frequently one and the same throughout.

Whenever they employed sandstone, it was absolutely necessary to cover it with a surface of a smoother and less absorbent nature, to prevent the colour being too readily imbibed by so porous a stone; and a coat of calcareous composition was laid on before the paint was applied. When the subject was sculptured, either in relief or intaglio, the stone was coated, after the figures were cut, with the same substance, to receive the final colouring; and it had the additional advantage of enabling the artist to finish the figures and other objects, with a precision and delicacy in vain to be expected on the rough and absorbent surface of sandstone.

The Egyptians mixed their paint with water, and it is probable, that a little portion of gum was sometimes added, to render it more tenacious and adhesive. In most instances we find red, green, and blue adopted; an union which, for all subjects, and in all parts of Egypt, was a particular favourite: when black was introduced, yellow was added to counteract or harmonise with it; and in like manner they sought for every hue its congenial companion.

In the examination of the colours used for painting the walls, while at Thebes, I was led to the conjecture*, that the reds and yellows were ochres; the blues and greens metallic, and prepared from copper; the black, a lampblack; and the white a finely levigated and prepared lime. I have since been favoured with an analysis of those brought by me from Thebes, which my friend Dr. Ure has had the kindness to make, and which I am happy in being able to introduce.

“ The colours are green, blue, red, black, yellow, and white: 1st. The green pigment, scraped from the painting in distemper, resists the solvent action of muriatic acid, but becomes thereby of a brilliant blue colour, in consequence of the abstraction of a small portion of yellow ochreous matter. The residuary blue powder has a sandy texture; and when viewed in the microscope is seen to consist of small particles of blue glass. On fusing this vitreous matter with potash, digesting the compound in diluted muriatic acid, and treating the solution with water of ammonia in excess, the presence of copper becomes manifest. A certain portion of precipitate fell, which being dissolved in muriatic acid, and tested, proved to be oxide of iron. We may hence conclude, that the green pigment is a mixture of a little ochre, with a pulverulent glass, made by vitrifying the oxides of copper and iron with sand and soda. The vitreous green coat upon the small Osiris figures, so numerous in the Egyptian tombs of the earliest times, is a similar composition.

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* Egypt and Thebes, p. 443.

"The green colour washed from the stone with a sponge, and afterwards evaporated, consists of blue glass in powder, mixed with a little ochre, and particles of colourless glass, to which it owes its brighter hue.

"2. The blue* pigment scraped from the stone is a pulverulent blue glass of like composition, without the ochreous admixture, brightened with a little of the chalky matter used in the distemper preparation.

"3. The red pigment obtained by washing the coloured stone in the tombs of the kings with a wet sponge, and evaporating the liquid to dryness, when treated with water, evinces the presence of glutinous gummy matter.† It dissolves readily, in a great measure, in muriatic acid, and affords muriates of iron and alumina. It is merely a red earthy bole.

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* It is remarkable how much the Egyptian method of making this colour resembled in principle that of our smalt. It agrees with the false *cyanus* of Theophrastus (s. 98.), invented by an Egyptian king, which, he says, was laid on thicker than the native (or lapis lazzuli). Pliny confounds the two, xxxvii. 9.

† The Egyptian colours contain gum; but the quantity in these specimens was owing to my having added it to form them into cakes.

"4. The black pigment washed off the stone in the same manner with a sponge, is not affected by digestion in rectified petroleum, and contains, therefore, no bitumen. It softens in hot water immediately, and dissolves readily into a black liquid, which evidently contains a gummy or mucilaginous matter. When exposed to a red heat, upon a slip of platinum, it takes fire, and burns with a fleeting white flame. The remaining matter is difficult to incinerate, even under the blowpipe, and then leaves a bulky grey ash. This residuum dissolves, with very little effervescence, in hot muriatic acid. When ammonia is dropped into this solution it causes a bulky precipitate, which does not re-dissolve in excess of solution of potash. These phenomena show the pigment in question to be bone black (mixed with a little gum). By another experiment, I found in it traces of iron.

"5. The white pigment scraped from the stone in the tombs of the kings, is nothing but a very pure chalk, containing hardly any alumina, and a mere trace of iron.

"6. The yellow pigment is a yellow iron ochre."

SCULPTURES IN RELIEF AND IN INTAGLIO.

The oldest Egyptian sculptures on all large monuments were in low relief, and, as usual, at every period, painted; obelisks and every thing carved in hard stone*, some funereal tablets and other small objects, being in intaglio. This style continued in vogue until the time of Remeses II., who began to introduce intaglio generally on large monuments, and even his battle scenes at Karnak and the Memnonium are executed in this manner. The reliefs were little raised above the level of the wall; they had generally a flat surface, the edges softly rounded off, in effect, far surpassing the intaglio; and it is to be regretted that the best epoch of art, when design and execution were in their zenith, should have abandoned a style so superior, which, too, would have improved in proportion to the advancement of that period.

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* Some few granite monuments are in relief, but they are rare.

Intaglio continued to be generally employed, until the accession of the 26th dynasty, when the low relief was again introduced; and in the monuments of Psamaticus and Amasis are numerous instances of the revival of the ancient style. This was afterwards universally adopted, and no return to intaglio on large monuments was attempted, either in the Ptolemaic or Roman periods.

The intaglio introduced by Remeses may, perhaps, be denominated *intaglio relievato*, or relieved intaglio. The sides of the *incavo*, which are perpendicular, are cut to a considerable depth, and from that part, to the centre of the figure (or whatever is represented) is a gradual swell, the centre being frequently on a level with the surface of the wall. On this all the parts of dress, features, or devices, are delineated and painted, and even the perpendicular sides are onamented in a corresponding manner, by continuing upon them the adjoining details.

In the reign of Remeses III. a change was made in the mode of sculpturing the intaglios, which, as I have already observed*, consisted in carving the lower side to a great depth, while the upper face inclined gradually from the surface of the wall till it reached the innermost part of the intaglio; it was principally done in the hieroglyphics, in order to enable a person standing immediately beneath, and close to the wall on which they were sculptured, to distinguish and read them; and the details upon the perpendicular sides, above mentioned, had the same effect.

It was a peculiarity of style not generally imitated by the successors of Remeses III., and hieroglyphics bearing this character may serve to fix the date of monuments, wherever they are found, to the age of that monarch. After his reign no great encouragement appears to have been given to the arts; the subjects represented on the few monuments of the epoch intervening between his death, and the succession of the 26th dynasty, are principally confined to sacred subjects, in which no display of talent is shown; and the records of Sheshonk's victories at Karnak are far from partaking of the vigour of former times, either in style, or in the mode of treating the subject.

After the accession of the 26th dynasty some attempt was made to revive the arts, which had been long neglected; and independent of the patronage of government, the wealth of private individuals was liberally employed in their encouragement. Public buildings were erected in many parts of Egypt, and beautified with rich sculpture; the city of Saïs, the royal residence of the Pharaohs of that dynasty, was adorned with the utmost magnificence; and extensive additions were made to the temples of Memphis, and even to those of the distant Thebes.

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* *Vide* Vol. I. p. 85.; and Materia Hierogl. p. 95.

The fresh impulse thus given to art was not without effect; the sculptures of that period exhibit an elegance and beauty, which might even induce some to consider them equal to the productions of an earlier age; and in the tombs of the Assaseef, at Thebes, are many admirable specimens of Egyptian art. To those, however, who understand the true feeling of this peculiar school, it is evident, that though in minuteness and finish they are deserving of the highest commendation, yet, in grandeur of conception and in boldness of execution, they fall far short of the sculptures of Osirei, and the second Remeses.

In forming an opinion of the different styles of Egyptian sculpture, it is frequently difficult for an unpractised eye to decide upon their peculiar merits, or their respective ages; and in nothing, perhaps, has this been more fully demonstrated, than in the Isiac table, now at Turin. Every one, acquainted with Egyptian art, must be struck at first sight with the very modern date and Roman origin of this monument; and the position of the hieroglyphics shows that the maker of it was ignorant of the subject he was treating. I should, therefore, not have thought it necessary to notice so palpable a forgery, had not the learned Winkelmann censured bishop Warburton for a judicious remark, in which he is borne out by fact, and for which he deserves great credit. "I cannot help," says Winkelmann*, "here noticing an error of Warburton, who advances, that the famous Isiac table of bronze, inlaid with figures in silver, is a work made at Rome. His opinion is destitute of foundation, and he only appears to have adopted it, because it suited his own system. Be it as it may, this monument has all the character of the most ancient Egyptian style."

Justice must be done to the judgment of Warburton, and a remark of this kind, made by a person of Winkelmann's reputation, is of too great weight to pass unnoticed.

The invasion of Cambyses, as I have already stated, struck a death blow to the arts in Egypt. Sculptors, painters, and artisans of every description, were taken from their country, and sent to Persia by the victors to embellish the monuments of their enemies with the records of their own misfortunes; and in spite of the encouragement afterwards given by the Ptolemies, the spark of genius, then so nearly extinguished, could not be rekindled, and Egypt was doomed to witness the total decadence of those arts for which she had been long renowned.

The sculptures of the Ptolemaic periods are coarse and heavy, deficient in grace and spirit, and totally wanting in the character of the true Egyptian school, at the same time that they partake of nothing Greek either in form or feeling; for the Egyptians never borrowed any notions, on those points, from the foreigners with whom they had so long an intercourse, throughout the period of Greek and Roman rule. The sculptures executed in the time of the Cæsars are still more degraded in every respect; and so low did they fall at this period, that many do not claim a rank above those of the humblest village tombstone. Still the architecture continued to be grand and majestic, and many of the monuments of a Ptolemaic and Roman era merit a better style of sculpture.

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* Winkelmann, Hist. de l'Art. lib. ii. c. 1. s. 46.

" Architecture," as I have elsewhere observed*, " more dependent on adherence to certain rules than the sister art, was naturally less speedily affected by the decline of taste and ingenuity of its professors; and as long as encouragement was held out to their exertions, the grandest edifices might be constructed from mere imitation, or from the knowledge of the means necessary for their execution. But this could never be the case with sculpture, which had so many more requisites than previous example or long established custom; nor could success be attained by the routine of mechanism, or the servile imitation of former models."

It is remarkable that the architecture, even of the early time of Osirtasen, far excelled the sculpture of that day; and the grace and simplicity of the grottos at Beni Hassan, which call to mind in their elegant columns the Doric character, must be highly admired, even though seen amidst the grandeur of the monuments of Remeses. These columns are 3 ft. 4 in. in diameter, and 16 ft. 8½ in. high*; they have sixteen faces or grooves, each about eight inches wide, and so slight and elegant that their depth does not exceed half an inch. One of the faces, which is not hollowed into a groove, is left for the introduction of a column of hieroglyphics.

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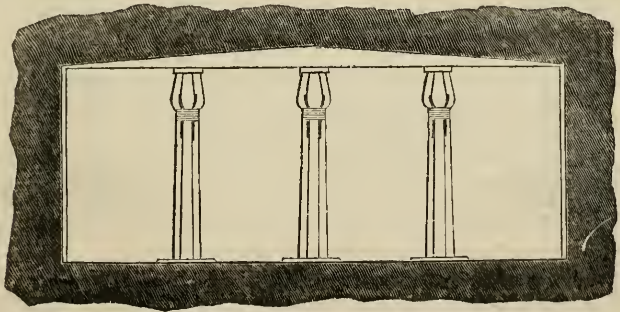
* Egypt and Thebes, p. 163.

The roofs of some of the grottos of Beni Hassan, are cut into a slight segment of a circle, in imitation of the arch, which, as I have had occasion to observe, was probably known in Egypt at this early period; and it is remarkable, that the walls are stained and sprinkled with colour, to give them the appearance of red granite. This is the general character of the larger and northernmost grottos; the others differ, both in the form and style of the columns, and in their general appearance; but the transverse section of one of them will suffice to show the elegance of their depressed pediment, — which extends, in lieu of architrave,



No. 383. Section of one of the *southern* grottos of Beni Hassan.

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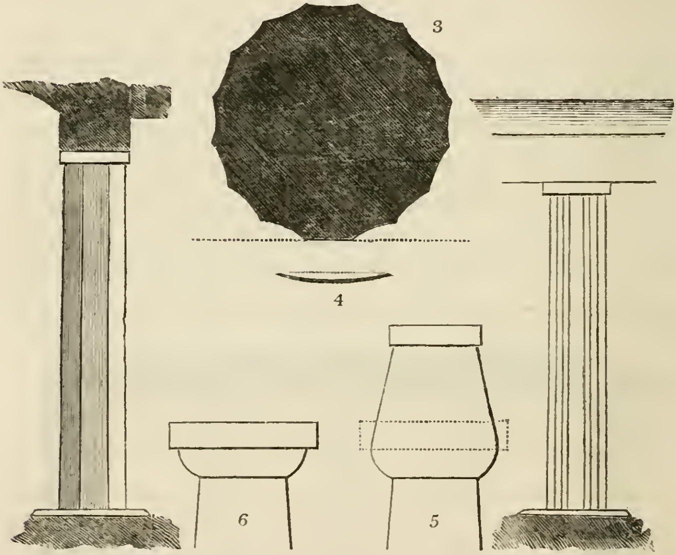
* *Vide* wood-cut, No. 384. *figs.* 2, 3.

over the columns of the interior,—and the simplicity of their general effect.

The most favourite Egyptian capitals were those in form of the full blown water plant, supposed by some to be the papyrus, which was emblematic of the lower country*, and the unopened bud of the same, or of the lotus; and that this last gave the original idea of the Doric capital is not improbable, since, by removing the upper part, and bringing down the abacus, it presents the same appearance as the early Greek style. †



No. 384.

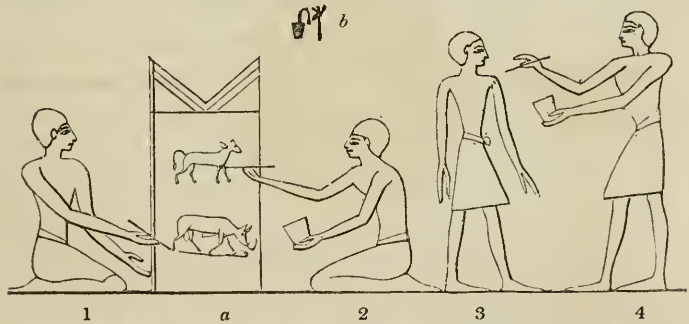
Fig. 1. Columns in the portico of the *northern* grottos of Beni Hassan.
2. Columns of the interior.
3. Horizontal section of fig. 2, showing the grooves.
4. One of the grooves on a larger scale.
5. An Egyptian capital, which seems to have been the origin of the Doric: fig. 6.

* *Vide* Capitals of Columns, Frontispiece of this Volume.

† *Vide* wood-cut, No. 384. *figs.* 5, 6.

PAINTING.

Of painting, apart from sculpture, and of the excellence to which it attained in Egypt, we can form no accurate opinion, nothing having come down to us of a Pharaonic period, or of that epoch when the arts were at their zenith in Egypt; but that, already in the time of Osirtasen, they painted on board, is shown by one of the subjects at Beni Hassan, where two artists are engaged in a picture, representing a calf, and an antelope overtaken by a dog. The painter holds his brush in one hand, and his palette or saucer of colour in the other; but, though the boards stand upright, there is no indication of a contrivance to steady or support the hand.



No. 385. Artists painting on a board, and colouring a figure. *Beni Hassan.*

Mention is made of an Egyptian painting by Herodotus, who tells us that Amasis sent a portrait of himself to Cyrene*, probably on wood; and some, of uncertain period, have been found in the tombs of Thebes. Two of these are preserved in the British Museum, but they are evidently of Greek time, and, perhaps, even after the conquest of

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* Herod. ii. 182.

Egypt by the Romans. It is therefore vain to speculate on the nature of their painting, or their skill in this branch of art; and, though some of the portraits taken from the mummies may prove that encaustic painting with wax and naphtha was adopted in Egypt, the time when it was first known there is uncertain, nor can we conclude from a specimen of Greek time, that the same was practised in a Pharaonic age.

Pliny states, in his chapter on inventions[*], that "Gyges, a Lydian, was the earliest painter, in Egypt; and Euchir, a cousin of Dædalus, according to Aristotle, the first in Greece; or, as Theophrastus thinks, Polygnotus the Athenian." But the painting represented at Beni Hassan evidently dates before any of those artists. Pliny, in another place[†], says, "the origin of painting is uncertain: the Egyptians pretend that it was invented by them 6000 years before it passed into Greece; a vain boast, as every one will allow." It must, however, be admitted, that all the arts were cultivated in Egypt long before Greece existed as a nation; and the remark he afterwards makes[‡], that painting was unknown at the period of the Trojan war, can only be applied to the Greeks; as is shown by the same unquestionable authority at Beni Hassan, of the remote era of Osirtasen, who lived upwards of 1700 years before our era, between five and six hundred years previous to the taking of Troy.

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[*] Plin. vii. 56.

[†] Plin. xxxv. 3. He also mentions line drawings as an invention of the Egyptians.

[‡] Plin. xxxv. 3., at the end.

STYLE OF THEIR DRAWING.

The skill of the Egyptian artists in drawing bold and clear outlines is, perhaps, more worthy of admiration than any thing connected with this branch of art; and I have had occasion to notice the freedom, with which the figures in the unfinished part of Belzoni's tomb at Thebes are sketched. I have also noticed * the manner in which they began those drawings previous to their being sculptured and painted.

The walls having been ruled in red squares "the position of the figures was decided by the artist, who traced them roughly with a red colour; and the draughtsman then carefully sketched the outlines in black, and submitted them to the inspection of the former, who altered (as appears in some few instances here) those parts which he deemed deficient in proportion or correctness of attitude; and in that state they were left for the chisel of the sculptor." Sometimes the squares were dispensed with, and the subjects were drawn by the eye, which appears to have been the case with many of those in the tomb here alluded to.

In some pictures, we observe certain conventional rules of drawing, which are singular, and perhaps confined to the Egyptians and Chinese, an instance of which may be seen in the frontispiece to my 'Materia Hieroglyphica.' The subject represents Amunra the god of Thebes seated on his throne, and presenting the emblem of life to Remeses the Great, who stands before him. The deities Khonso and Bubastis are also present. The god being con-

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* Egypt and Thebes, p. 107.

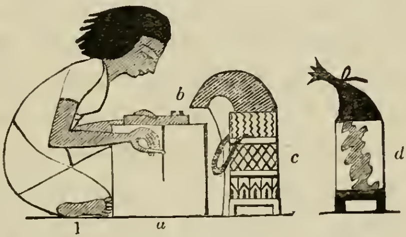
sidered the principal figure, every means are used to prevent the intervention of any object, which might conceal or break through its outline: the leg therefore of the king, though in reality coming in front, is placed behind his foot; but as the base of the throne is of less importance than the leg of the king, the latter is continued in an unbroken line to the bottom of the picture; and the same is observed in his hand, which being an object of more consequence in the subject than the tail of the deity, is not subjected to any interruption.

The Egyptians had no notion of perspective, either in figures, or in the representation of inanimate objects; and those on the same plane, instead of being shown one behind the other, were placed in succession one above the other, on the perpendicular wall.

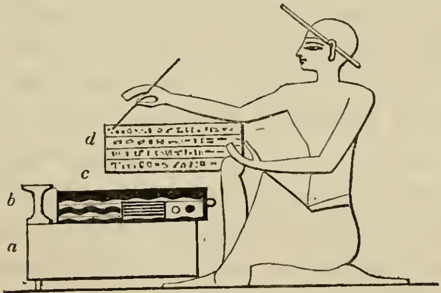
Of the quality of the pencils they used, for drawing and painting, it is difficult to form any opinion. Those generally employed for writing were a reed or rush, many of which have been found with the tablets or inkstands belonging to the scribes; and with these, too, they probably sketched the figures in red and black upon the stone, or stucco of the walls. To put in the colour, we may suppose that brushes of some kind were used; but the minute scale on which the subjects are indicated in the sculptures prevents our deciding the question.

Habits among men of similar occupations are frequently alike, even in the most distant countries; and, we find it was not unusual for an Egyptian artist, or scribe, to put his reed pencil behind his ear, when engaged in examining the effect of his painting, or listening to a person on business, as in the modern studio, or the counting-house of an European town.

Painters and scribes deposited their writing implements in a box with a pendent leather top, which was tied up with a loop or thong; and a handle, or strap was fastened to the side to enable them to carry it more conveniently. Their ordinary wooden tablet was furnished with two or more cavities for holding the colours, a tube in the centre containing the pens or reeds; and certain memoranda were frequently written at the back of it, when a large piece of papyrus, or the wooden slab, were not required.



No. 386. — A scribe writing on a tablet. *c* and *d* are two cases for carrying writing materials. *Thebes.*



No. 387. — Scribe with his inkstand upon the table. One pen is put behind his ear, and he is writing with another. *Thebes.*

ARCHITECTURE.

Of the architecture, plans, and distribution of their dwelling-houses, I have already treated in a preceding volume*; and of the great use they made of crude brick for this purpose; those burnt in a kiln being rarely employed, except in damp situations.† The bricks were formed in a simple mould, frequently bearing a government stamp; and the number of persons employed in their manufacture is readily accounted for by the great demand for those materials in the construction of dwelling houses, and ordinary buildings; stone being confined principally to the temples, and other monuments connected with religion; but this has been already noticed; and I now merely introduce the subject of crude brick in connection with the arch.

I have frequently had occasion to mention the antiquity of the arch, and have shown that it existed of brick in the reign of Amunoph I., as early as the year 1540 before our era‡, and of stone in the time of the second Psamaticus, B. C. 600.§ I have suggested the probability of its having owed its invention to the small quantity of wood in Egypt, and the consequent expence of roofing with timber, and have ventured to conclude, from the paintings at Beni Hassan, that vaulted buildings were made in Egypt as early as the reign of Osirtasen, the contemporary of Joseph, who lived between three and four thousand years ago.‖

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* Vol. II. p. 95. *et seq.*

† The southern extremity of the quay, near the temple of Luqsor, at Thebes, is built of burnt brick. Crude bricks were common in many Eastern countries, as at Babylon, and other places.

‡ Egypt and Thebes, p. 81. and 126.

§ Ibid. p. 337.

‖ *Suprà*, Vol. II., p. 117.

The age of the crude brick pyramids of Memphis, and the Arsinoïte nome is unknown. Herodotus tells us the first built of those materials was erected by Asychis, whom he makes the predecessor of Anysis the contemporary of Sabaco, thus limiting its date to the ninth century before our era; and, consequently, as I have observed*, making it posterior to those at Thebes, which were erected about the period of the 18th dynasty. It is, however, far more probable, that a long period intervened between the reigns of Asychis and Anysis†; and that the former lived many ages before Bocchoris; which is confirmed by another passage in Herodotus, placing him as the immediate successor of Mycerinus the son of Cheops; and the ruinous and crumbled appearance of the brick pyramids of Dashoor, fully justifies the opinion that they were erected very soon after the stone ones, near which they stand, and to which the inscription of Asychis forbade the spectator to compare them.‡ They have had chambers, the lower part of whose side walls are still visible; and we may be permitted to conclude that they were arched, like those at Thebes.

If, then, the brick pyramids of Memphis were erected by the successsor of the son of Cheops, and the chambers were, as I suppose, vaulted, the invention of the arch will be carried back nearly 700 years prior to the reign of Amunoph,

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[*] *Suprà*, Vol. I. p. 132.

[†] To prevent further discussion on the reigns of those kings, I did not suggest this opinion in the historical notice taken from Herodotus (in Vol. I. p. 132.), and have reserved it for the present occasion, as it bears more particularly on the question respecting the antiquity of the arch.

[‡] *Vide* Vol. I. p. 131.

about 2020 years before our era. This is a conjecture on which I do not wish to insist; we may, for the present, be satisfied with the fact that this style of building was in common use 3370 years ago, and rejoice that the name of Amunoph has been preserved on the stucco, coating the interior of a vaulted tomb at Thebes, to announce it, and to silence the incredulity of a sceptic.

The appearance and position of other tombs, in the vicinity of the Ptolemaic temple of Dayr el Medeeneh at Thebes, had always convinced me that their vaulted roofs were of the time of Amunoph and his immediate successors; but, however satisfied on this point myself, I could find no name to sanction my opinion, or to justify me in its assertion, until accident threw in my way the building in question*, while prosecuting my researches there in 1827; and I have the satisfaction to learn that another tomb has since been discovered of similar construction, which presents the ovals of the third Thothmes.

The pyramids of Gebel Birkel (Napata), and Dunkalah (Meroë), are of uncertain date, but there is every reason to believe them, as well as the small temples attached to their front, of an age long anterior to the Ptolemies, or, as Mr. Hoskins thinks, "of a far more ancient date than Tirhaka;" and we there find stone arches, both round and *pointed*†, some of which are built with a keystone‡, on the same principle as our own.

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* Materia Hierogl. p. 80.

† *Vide* Hoskins's Ethiopia, p. 156.

‡ The keystone is mentioned by Seneca, Epist. 90. Many round and pointed arches of a late time have been built without it, and the principle of the arch does not depend upon it, but on the adjustment of *all* the stones.

At Memphis, too, near the modern village of Saqqara, is a tomb, with two large vaulted chambers, whose roofs display in every part the name and sculptures of the second Psamaticus. They are cut in the limestone rock; and in order to secure the roof, which is of a friable nature, they are lined, if I may so call it, with an arch, as our modern tunnels. The arch is of stone, and presents a small and graceful segment of a circle, having a span of seven feet ten inches, and a height of two feet eight inches and a half.*

Numerous crude brick arches, of different dates, exist in Thebes†, besides the small pyramids already alluded to, some of which are of very beautiful construction. The most remarkable are the doorways of the enclosures surrounding the tombs in the Assaseéf, which are composed of two or more concentric semicircles of brick‡, as well constructed as any of the present day. They are of the time of Psamaticus and other princes of the 26th dynasty, immediately before the invasion of Cambyses. All the bricks radiate to a common centre: they are occasionally pared off at the lower part, to allow for the curve of the arch, and sometimes the builders were contented to put in a piece of stone to fill up the increased space between the upper edges of the bricks. In those roofs of houses or tombs, which were made with less care, and required less solidity, the bricks were placed longitudinally, in the direction of the curve of the vault, and the lower ends were then cut away considerably, to allow for the greater opening between them; and many were grooved at the sides, in order to retain a greater quantity of mortar between their united surfaces.

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* *Vide* Vignette I. of this chapter.

† One is introduced into wood-cut No. 388. *fig.* 1.

‡ As of that in wood-cut, No. 119. p. 131. Vol. II.

Though the oldest stone arch, whose age has been positively ascertained, dates only in the time of Psamaticus, we cannot suppose that the use of stone was not adopted by the Egyptians for that style of building, previous to his reign, even if the arches of the pyramids in Ethiopia should prove not to be anterior to the same era. Nor does the absence of the arch in temples and other large buildings excite our surprise, when we consider the style of Egyptian monuments; and no one who understands the character of their architecture could wish for its introduction. In some of the small temples of the Oasis, the Romans attempted this innovation, but the appearance of the chambers so constructed fails to please; and the whimsical caprice of Osirei, who introduced an imitation of the arch in a temple at Abydus, was not followed by any of his successors.* In this building the roof is formed of single blocks of stone reaching from one architrave to the other, which, instead of being placed in the usual manner, stand upon their edges, in order to allow room for hollowing out an arch in their thickness: but it has an effect of inconsistency, without the plea of advantage or utility.

Another imitation of the arch occurs in a building at Thebes. Here, however, a reason may perhaps be given for its introduction, being in the style of a tomb, and not constructed as an Egyptian temple, nor bound to accord with the ordinary rules of architecture. The chambers, like those of the tomb of Saqqara, lie under a friable rock, and are cased with masonry, to prevent the fall of its crumbling stone; but instead of being roofed on the principle of the arch, they are covered with a number of large blocks placed horizontally, one projecting beyond that immediately below it, till the uppermost two meet in the centre, the interior angles being afterwards rounded off to form the appearance of a vault.

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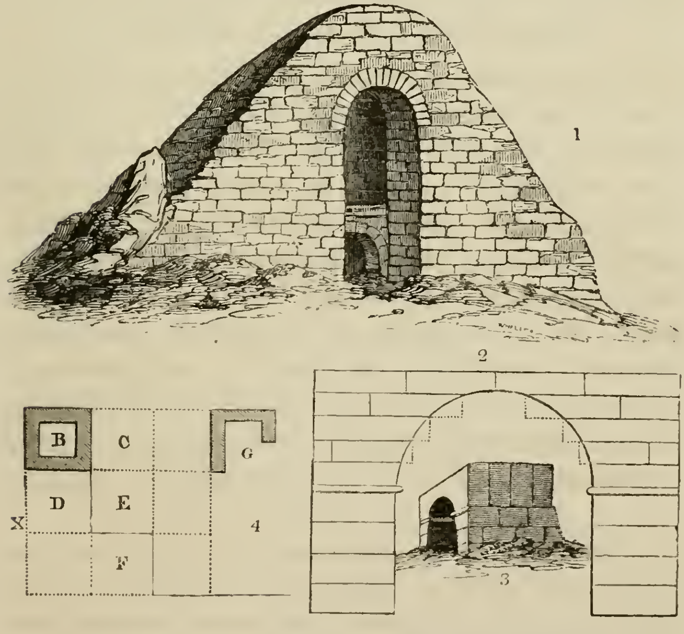
* *Vide* wood-cut, No. 388. *fig.* 3.

The date of this building is about 1500, B. C.,



No. 388.—Fig. 1. Vaulted rooms and doorway of a crude brick pyramid at Thebes.
2. An imitation of an arch at Thebes.
3. Another at Abydus.
4. Mode of commencing a quarry.

consequently many years after the Egyptians had been acquainted with the art of vaulting; and the reason of their preferring such a mode of construction probably arose from their calculating the great difficulty of repairing an injured arch, in this position, and the consequences attending the decay of a single block; nor can any one suppose, from the great superincumbent weight applied to the *haunches*, that this style of building is devoid of strength, and of the usual durability of an Egyptian fabric, or pronounce it ill suited to the purpose for which it was erected.*

STONES HEWN FROM QUARRIES FOR BUILDING, FOR SCULPTURE, AND OTHER PURPOSES.

The most ancient buildings in Egypt were constructed of limestone, hewn from the mountains bordering the valley of the Nile to the east and west, extensive quarries of which may be seen at El Maasara†, Nesleh Shekh Hassan, El Maabdeh, and other places; and evidence of its being used long before sandstone is derived from the tombs near the pyramids, as well as those monuments themselves, and from the vestiges of old substructions at Thebes.‡ Limestone continued to be occasionally employed for building even after the succession of the 16th dynasty§; but so soon as the durability of sandstone was ascertained, the quarries of Silsilis* were opened, and those materials were universally adopted, and preferred for their even texture, and the ease with which they were wrought.

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* *Vide* wood-cut, No. 388. *fig.* 2.

† *Vide* Egypt and Thebes, p. 322. and 348., the Troici lapidis mons of Ptolemy and Strabo.

‡ Limestone blocks are sometimes found in the thickness of the walls of sandstone temples, of the time of Remeses II. and other kings, taken from older monuments.

§ Herodotus says, Amasis, even, used the stone of the quarries near Memphis, probably of the Maasara hills, for part of the temple of Minerva at Saïs, lib. ii. 175. *Vide* Egypt and Thebes, p. 442.

The extent of the quarries at Silsilis, is very great; and, as I have elsewhere observed, "it is not by the size and scale of the monuments of Upper Egypt alone that we are enabled to judge of the stupendous works executed by the ancient Egyptians: these would suffice to prove the character they bore, were the gigantic ruins of Thebes and other cities† no longer in existence. And safely may we apply the expression, used by Pliny in speaking of the porphyry quarries, to those of Silsilis, "they are of such extent, that masses of any dimensions might be hewn from them."

In opening a new quarry, when the stone could not be taken from the surface of the rock, and it was necessary to cut into the lower part of its perpendicular face, they pierced it with a horizontal shaft; beginning with a square trench, and then breaking away the stone left in the centre (as indicated in the wood-cut by the space B), its height and breadth depending of course on the size of the stones required. They then cut the same around C, and so on to any extent in a horizontal direction, after which they extended the work downwards, in steps, taking away E, and leaving D for the present, and thus descending as far as they found convenient, or the stone continued good. They then returned, and cut away the steps D, F, and all the others, reducing each time one step in depth, till at last there remained at X a perpendicular wall; and when the quarries were of very great horizontal extent, pillars were left at intervals to support the roof.

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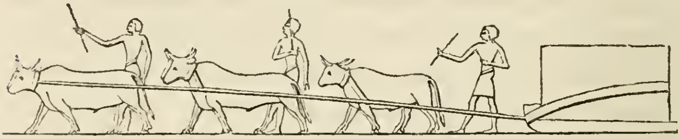
* Egypt and Thebes, p. 439.

† Herodotus (ii. 177), and Pliny (v. 9.), reckon 20,000 cities in Egypt in the time of Amasis.

In one of the quarries at El Maasara, the mode of transporting the stone is represented. It is placed on a sledge, drawn by oxen, and is supposed to be on its way to the inclined plane that led to the river; vestiges of which may still be seen a little to the south of the modern village.



No. 389. Removing a stone from the quarries at El Maasara.

Sometimes, and particularly when the blocks were large and ponderous, men were employed to drag them, and those condemned to hard labour in the quarries as a punishment, appear to have been required to assist in moving a certain number of stones, according to the extent of their offence, ere they were liberated; and this expression, "I have dragged 110 stones for the building of Isis at Philæ," in an inscription at the quarries of Gertassy in Nubia, seems to confirm my conjecture. In order to keep an account of their progress, they frequently cut the initials of their name, or some private mark, with the number, on the rock whence the stone was taken, as soon as it was removed: thus, C. XXXII., PD. XXXIII., PD. XXXIIII., and numerous other signs occur at the quarries of Fateereh.

The blocks were taken from the quarry on sledges; and in a grotto behind E'Dayr, a Christian village between Antinoë and El Bersheh, is the representation* of a colossus, which a number of men are employed in dragging with ropes; a subject doubly interesting, from being of the early age of Osirtasen II., and one of the very few paintings which throw any light on the method employed by the Egyptians for moving weights. For it is singular, that we find no illustration of the mechanical means of a people who have left so many unquestionable proofs of skill in these matters.

It is not to be supposed that the colossus was hewn in the hill of El Bersheh. This picture, like the trades, fowling scenes, and other subjects, represented in similar grottoes, only refers to one of the occupations of the Egyptians†; nor does it even follow, that the inmate of the tomb had any office connected with the superintendence of the quarries whence it was brought.

One hundred and seventy-two men‡, in four rows, of forty-three each, pull the ropes attached to the front of the sledge; and a liquid, probably grease, is poured from a vase, by a person standing on the pedestal of the statue, in order to facilitate its progress as it slides over the ground; which was probably covered with a bed of planks, though they are not indicated in the painting.

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* This curious subject was first discovered by captains Irby and Mangles. From the beard we see the statue is of a private individual.

† *Vide* Egypt and Thebes, p. 142.

‡ The number may be indefinite; and it is probable that more were really employed than indicated in the painting.

Some of the persons employed in this laborious duty appear to be Egyptians, the others are foreign slaves, who are clad in the costume of their country; and behind are four rows of men, who, though only twelve in number, may be intended to represent the set which relieved the others when fatigued.

Below are persons carrying vases of the liquid, or, perhaps water, for the use of the workmen, and some implements connected with the transport of the statue, followed by taskmasters with their wands of office. On the knee of the figure stands a man who claps his hands, to the measured cadence of a song, to mark the time and ensure their simultaneous draught; for it is evident that, in order that the whole power might be applied at the same instant, a sign of this kind was necessary; and the custom of singing at their work * was common to every occupation † among the Egyptians, as it now is in that country, in India, and many other places. Nor is it found a disadvantage among the modern sailors of Europe, when engaged in pulling a rope, or in any labour which requires a simultaneous effort.

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* The custom of singing or shouting, while treading grapes in the winepress, is mentioned by Jeremiah, xxv. 30. "He shall give a shout as they that tread the grapes;" and Isaiah, xvi. 10. "In the vineyard there shall be no singing," being common to other people as well as the Egyptians.

† Also during the dance. Conf. 1 Sam. xxi. 11. "Did they not sing one to another of him in dances?"

The height of the statue appears to have been about twenty-four feet, including the pedestal, and it was of limestone*, as the colour and the hieroglyphics inform us. It was bound to the sledge by double ropes, which were tightened by means of long pegs inserted between them, and twisted round until completely braced; and, to prevent injury from the friction of the ropes upon the stone, a compress of leather or other substance was introduced at the part where they touched the statue.

It is singular that the position of the ring to which all the ropes were attached for moving the mass, was confined to one place at the front of the statue, and did not extend to the back part of the sledge, but this was owing to the shortness of the body; and, when of great length, it is probable that ropes were fixed at intervals along the sides in order to give an opportunity of applying a greater moving power. For this purpose, in blocks of very great length, (as the columns at Fateereh, which are about 60 ft. long, and 8½ ft. in diameter,) certain pieces of stone were left, projecting from the sides, like the trunnions of a gun, to which several ropes were attached, each pulled by its own set of men.

Small blocks of stone were sent from the quarries by water to their different places of destination, either in boats or rafts; but those of very large dimensions were dragged by men, overland, in

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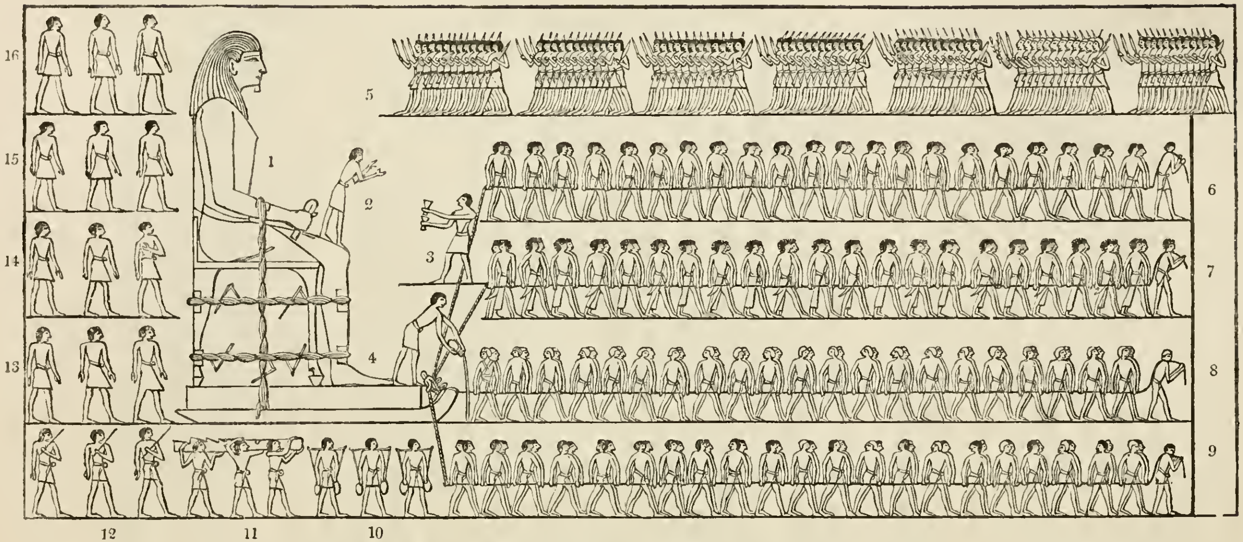
* The word in the hieroglyphics signifies either limestone or sandstone.



No. 390. Mode of transporting a colossus from the quarries, from a lithographic drawing, by Mr. Bankes. *In a grotto at El Bersheh.*

1. The statue bound upon a sledge with ropes. It is of a private individual, not of a king, or a deity.
2. Man probably beating time with his hands, and giving out the verse of a song, to which the men responded; though 3 appears as if about to throw something which 2 is preparing to catch.
4. Pouring a liquid, perhaps grease, from a vase.
5. Egyptian soldiers. 6, 7, 8, 9. Men, probably captives and convicts, dragging the statue.
10. Men carrying water, or grease. 11. Some implements.
12. Taskmasters. 13, 14, 15, 16. Reliefs of men.

the manner, here represented; and the immense weight of some shows that the Egyptians were well acquainted with mechanical powers, and the mode of applying a locomotive force with the most wonderful success.

The obelisks transported from the quarries of Syene, at the first cataracts, in latitude 24° 5′ 23″, to Thebes and Heliopolis, vary in size from seventy to ninety-three feet in length. They are of one single stone; and the largest in Egypt, which is that of the great temple at Karnak, I calculate to weigh about 297 tons. This was brought about 138 miles from the quarry to where it now stands, and those taken to Heliopolis passed over a space of more than 800 miles. The power, however, to move the mass was the same, whatever might be the distance, and the mechanical skill which transported it five, or even one, would suffice for any number of miles.

In examining the ruins of western Thebes, and reading the statements of ancient writers regarding the stupendous masses of granite conveyed by this people for several hundred miles, our surprise is greatly increased. We find in the plain of Qoorneh two colossi of Amunoph III., of a single block each*, forty-seven feet in height, which contain about 11,500 cubic feet, and are made of a stone not known within several days' journey of the place; and at the Memnonium, is another of Remeses II. which when entire weighed upwards of 887 tons*, and was brought from E'Sooan to Thebes, a distance, as before stated, of 138 miles. This is certainly a surprising weight, and we cannot readily suggest the means adopted for its transport, or its passage of the river; but the monolithic temple, said by Herodotus to have been taken from Elephantine to Buto, in the Delta, was still larger, and far surpassed in weight the pedestal of Peter the Great's statue at St. Petersburgh, which is calculated at about 1200 tons.

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* One of these is the vocal Memnon. *Vide* Egypt and Thebes, p. 33. *et seq.* This was broken and repaired.

He also mentions a monolith at Saïs, of which he gives the following account: — "What I admire still more, is a monument of a single block of stone, which Amasis transported from the city of Elephantine.† Two thousand men, of the class of boatmen, were employed to bring it, and were occupied three years in this arduous task. The exterior length is twenty-one cubits (31½ ft.); the breadth fourteen (22 ft.); and the height eight (12 ft.); and, within, it measures eighteen cubits twenty digits (28 ft. 3 in.) in length; twelve (18 ft.) in breadth; and five (7½ ft.) in height. It *lies* near the entrance of the temple, not having been admitted into the building, in consequence, as they say, of the engineer, while superintending the operation of dragging it forward, having sighed aloud, as if exhausted with fatigue, and impatient of the time it had occupied; which being looked upon by Amasis as a bad omen, he forbade its being taken any further. Some, however, state that this was in consequence of a man having been crushed beneath it while moving it with levers." *

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* Egypt and Thebes, p. 11.

† The island opposite Syene, immediately below the first cataract. The granite rocks stretch from the interior of the desert to the Nile in this part: the sandstone crosses the river more to the north, a little below Eilethyas. *Vide* Egypt and Thebes, p. 420. and p. 452.

Herodotus's measurement is given as it lay on the ground; his length is properly its height, and his height the depth, from the front to the back; for, judging from the usual form of these monolithic monuments, it was doubtless like that of the same king at Tel-et-Mai, given in Mr. Burton's Excerpta †, the dimensions of which are 21 ft. 9 in. high, 13 ft. broad, and 11 ft. 7 in. deep; and internally 19 ft. 3 in., 8 ft. and 8 ft. 3 in.

The weight of the Saïte monolith cannot certainly be compared to that of the colossus of Remeses; but when we calculate the solid contents of the temple of Latona at Buto, our astonishment is unbounded; and we are perplexed to account for the means employed to move a mass which, supposing the walls to have been only 6 ft. thick (for Herodotus ‡ merely gives the external measurement of forty cubits, or 60 ft. in height, breadth, and thickness,) must have weighed upwards of 5000 tons. §

The skill of the Egyptians was not confined to the mere moving of immense weights; their wonderful knowledge of mechanism is shown in the erection of obelisks, and in the position of large stones, raised to a considerable height, and adjusted with the utmost precision; sometimes, too, in

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* Herodot. ii. 175. † Plate 41. ‡ Herodot. ii. 155.

§ This is supposing it to be granite, as these monolithic temples were.

situations where the space will not admit the introduction of the inclined plane. Some of the most remarkable are the lintels and roofing stones of the large temples; and the lofty doorway leading into the grand hall of assembly, at Karnak, is covered with sandstone blocks, 40 ft. 10 in. long, and 5 ft. 2 in. square.

In one of the quarries at E'Sooan (Syene) is a granite obelisk, which having been broken in the centre after it was finished, was left in the exact spot where it had been separated from the rock. The depth of the quarry is so small, and the entrance to it so narrow, that it was impossible for them to turn the stone, in order to remove it by that opening; it is, therefore, evident that they must have lifted it out of the hollow in which it had been cut; as was the case with all the other shafts previously hewn in the same quarry. Such instances as these suffice to prove the wonderful mechanical knowledge of the Egyptians; and we may question whether with the ingenuity and science of the present day our engineers are capable of raising weights with the same facility as that ancient people.*

Pliny mentions several obelisks of very large dimensions, some of which were removed to Rome, where they now stand as tokens of the empty vanity of man.

The Egyptians naturally looked on those monuments with feelings of veneration, being connected with their religion, and the glorious memory of their monarchs; and at the same time perceived that, in buildings constructed as their temples were, the monotony of numerous horizontal lines required a relief of this kind; but the same feelings did not influence others, and few motives can be assigned for their removal to Europe, beyond the desire of possessing what required great difficulty to obtain, and flattered the pride of a vain people.

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* M. Lebas, well known in France as an eminent engineer, who removed the obelisk of Luxor now at Paris, has paid a just tribute to the skill of the Egyptians.

I will not pretend to say that the ancient Romans committed the same strange outrage to taste as their modern successors, who have destroyed the effect of the most graceful part of these monuments, by crowning the apex, which should of course terminate in a point, with stars, rays, or other whimsical additions; and, however habit may have reconciled the eye to such a monstrosity, every one who understands the beauty of form, and the harmony of lines, must observe and regret the incongruity of balls and weather-cocks on our own spires.

Pliny* says, that the first Egyptian king who erected an obelisk was Mitres, who held his court at Heliopolis, the city of the Sun, the deity to whom they were said to have been dedicated.† Many others were raised by different monarchs, and "Ramises" made one 99 feet in height, "on which he employed 20,000 workmen." "And, fearing lest the engineer should not take sufficient care to proportion the power of the machinery to the weight he had to raise, he ordered his own son to be bound to the apex, more effectually to guarantee the safety of the monument."*

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* Plin. xxxvi. 8.

† At Heliopolis; but in other places to other deities, as at Thebes to Amun, the god of that city.

The same writer describes a method of transporting obelisks from the quarries down the river, by lashing two flat-bottomed boats together, side by side, which were admitted into a trench, cut from the Nile to the place where the stone lay, laden with a quantity of ballast exactly equal to the weight of the obelisk; which, so soon as they had been introduced beneath the transverse block, was all taken out; and the boats rising, as they were lightened, bore away the obelisk in lieu of their previous burden. But we are uncertain if this method was adopted by the Egyptians; and though he mentions it as the invention of one Phœnix, he fails to inform us at what period he lived.

No insight, as I have already observed, is given into the secrets of their mechanical knowledge, from the sculptures, or paintings of the tombs, though so many subjects are there introduced. Our information, connected with this point, is confined to the use of levers, and a sort of crane; which last is mentioned by Herodotus, in describing the mode of raising the stones from one tier to another, when they built the pyramids. He says it was made of short pieces of wood†; — an indefinite expression, conveying no notion either of its form or principle; — and every stone was raised to the succeeding tier by a different machine.

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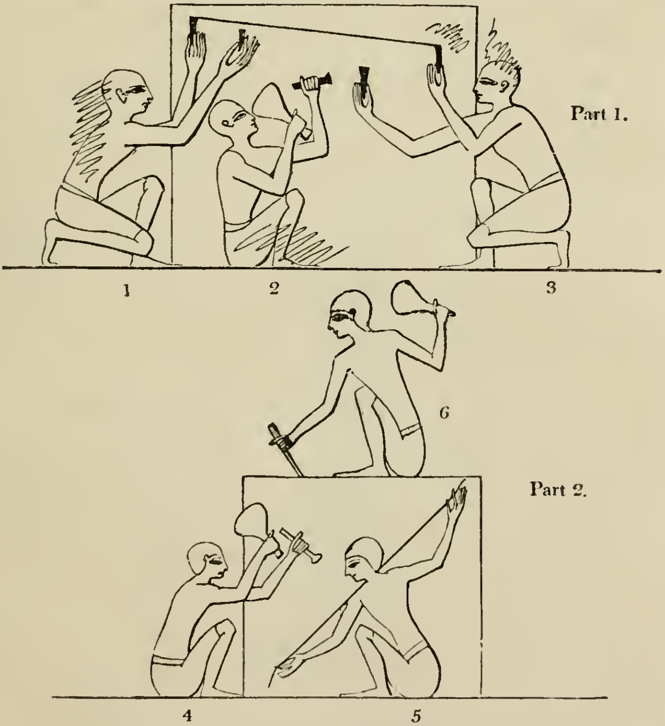
* Plin. xxxvi. 9.

† Herod. ii. 125.

Diodorus tells us*, that machines were not invented at that early period, and that the stone was raised by mounds or inclined planes; but we may be excused for doubting his assertion, and thus be relieved from the effort of imagining an inclined plane five hundred feet in perpendicular height, with a proportionate base.

It is true, that the occupations of the mason and



No. 391. Part 1. levelling, and Part 2. squaring a stone. *Thebes.*
Figs. 2, 4, 6, are using the chisel and mallet.

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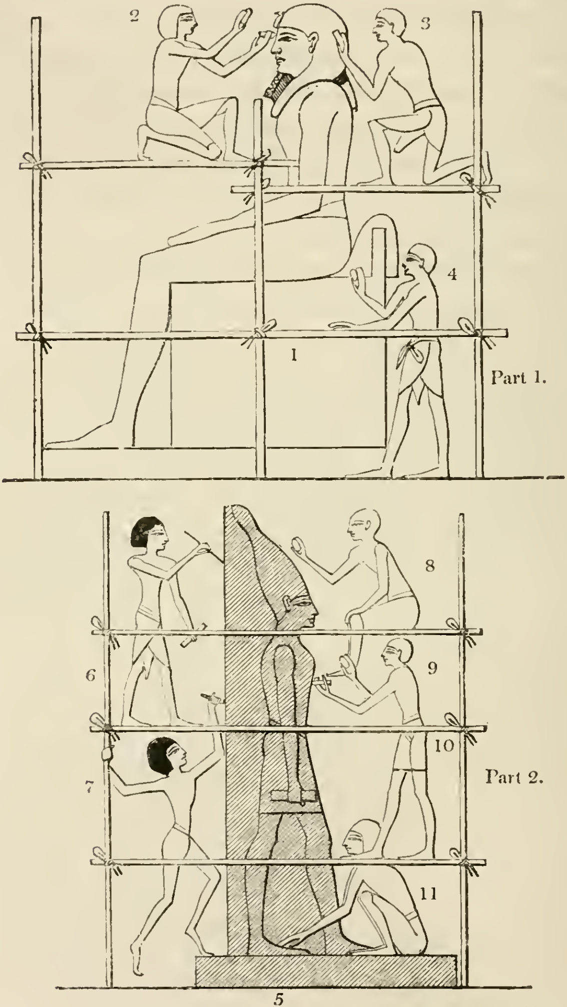
* Diodor. i. 63.

the statuary are sometimes alluded to in the paintings; the former, however, are almost confined to



No. 392. Part 1. Large sitting colossus of granite, which they are polishing.
Part. 2. Standing figure of a king, and, like the former, painted to represent granite.
Figs. 8. 10. 11. are polishing it; and figs. 6. and 7. painting and sculpturing the hieroglyphics at the back. *Thebes.*

the levelling or squaring a stone, and the use of the chisel. Some are represented polishing and painting statues of men, sphinxes, and small figures; and two instances occur of large granite colossi, surrounded with scaffolding*, on which men are engaged in chiseling and polishing the stone; the painter following the sculptor to colour the hieroglyphics he has engraved at the back of the statue.

The usual mode of cutting large blocks from the quarries was by a number of metal wedges, which were struck at the same instant along its whole length; sometimes, however, they seem to have been of highly dried wood, which being driven into holes previously cut for them by a chisel, and then saturated with water, split the stone by their expansion; and the troughs frequently found along the whole line of the holes, where the wedges were inserted, argue strongly in favour of this opinion.

Such a method could only be adopted when the wedges were in an horizontal position, upon the upper surface of the stone; but those put into the sides were impelled by the hammer only.

To separate the lower part of a ponderous mass from the rock, we may suppose they cut under it, leaving long pieces here and there to support it, like beams, which traversed its whole depth from the front to the back; and then having introduced wooden rafters into the open spaces which were cleared away, they removed the remainder of the stone, and the block rested on the wood.

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* *Vide* wood-cut, No. 392.

Some have imagined that they used the same means now practised in India, of lighting a fire along the whole length of the mass, in the direction where they intended it should split; and then pouring water upon it, cracked the stone in that part by its sudden action: but this is very doubtful, and the presence of the holes for the wedges sufficiently proves the method they usually employed.

INVENTIONS.

Among the remarkable inventions of a remote era among the Egyptians, may be mentioned bellows and siphons. The former were used at least as early as the reign of Thothmes III. the contemporary of Moses, being represented in a tomb bearing the name of that Pharaoh. They consisted of a leather bag, secured and fitted into a frame, from which a long pipe extended, for carrying the wind to the fire. They were worked by the feet, the operator standing upon them, with one under each foot, and pressing them alternately, while he pulled up each exhausted skin with a string he held in his hand. In one instance we observe from the painting, that when the man left the bellows, they were raised, as if full of air*; and this would imply a knowledge of the valve.

It is uncertain when bellows were first invented; the earliest contrivance of this kind was probably a mere reed or pipe; which we find used by

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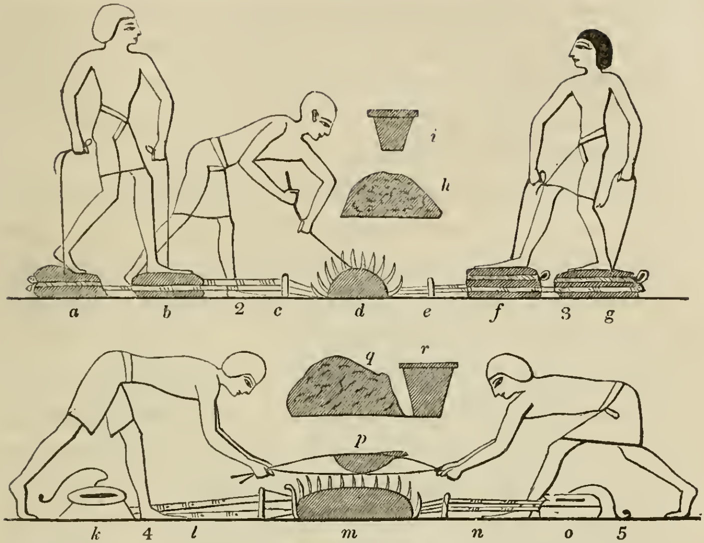
* *Vide* wood-cut, No. 393. *k*, *o*.



No. 393. Bellows. *Thebes.*

a, *b*, *k*, *o*, the leather case. *c*, *e*, *l*, *n*, the pipes conveying the wind to the fire. *d*, *m*, the fire. *h*, *q*, charcoal. *k* and *o*, are raised as if full of air.

goldsmiths in the age of Osirtasen*, and also at a late period, after the invention of bellows; and the tubes of these last appear even in the time of Thothmes III. to have been simply of reed, tipped with a metal point, to resist the action of the fire.

In process of time the sack containing the air was added, and various improvements succeeded each other in the form and principle of the bellows; there are, however, no means of ascertaining the period when they assumed their present form; and the merit of the late invention of *wooden* bellows is still disputed. Strabo ascribes the bellows[*] to Anacharsis, but with the evident conviction that these, the double anchor, and the potter's wheel[†], were of an age far anterior to the Scythian philosopher; which is fully proved by the paintings at Thebes.

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* It does not follow from the use of the pipe at Beni Hassan, that bellows were unknown at that period, because it continued to be used long after the time of Thothmes. *Vide* wood-cut, No. 374.

The ordinary hand-bellows, now used for small fires in Egypt, are a sort of bag made of the skin of a kid, with an opening at one end (like the mouth of a common carpet bag), where the skin is sewed upon two pieces of wood; and these being pulled apart by the hands, and closed again, the bag is pressed down, and the air thus forced through the pipe at the other end. It is, perhaps, an ancient invention, but I find no indication of it in the paintings.

The bellows with sides of wood, made at the present day, are a more perfect construction than these last, or the foot-bellows of the time of Thothmes. They are supposed to have been known to the Greeks, though I confess, the

> "——— taurinis follibus auras
> Accipiunt redduntque"

of Virgil[‡], is rather calculated to convey the idea of bellows made of ox leather[§], without wooden sides.

Siphons are shown to have been invented in Egypt, at least, as early as the reign of Amunoph II. 1450 years before our era; and they again occur in the paintings of the third Remeses. In a tomb at Thebes bearing the name of Amunoph, their use is unequivocally pointed out, by one man pouring a liquid into some vases, and the other drawing it off, by applying the siphon to his mouth, and thence to a large vase; and it is not improbable

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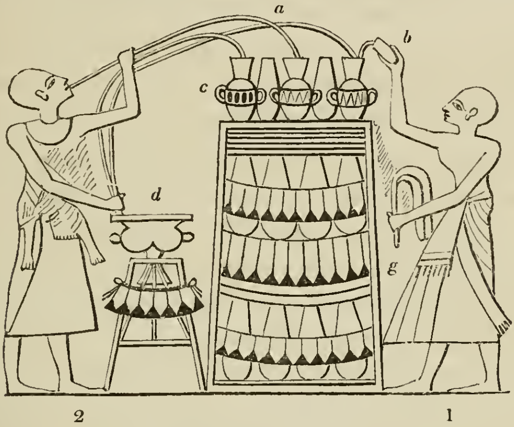
[*] Strabo. vii. p. 209. "Ζωπυρα."

[†] Seneca, Ep. 90. Plin. vii. 56.

[‡] Virg. Georg. iv. 171. *Vide* Herodot. i 68.

[§] Beckmann says "that bulls' leather," which Virgil mentions, "is unfit for bellows, and that ox or cow leather can only be used for that purpose." Vol. I. p. 104.



No. 394. Siphons used in the year 1450 B. C. *Thebes.*
1 pours a liquid into vases from the cup *b*; and 2 draws it off by the siphons *a*.

that they owed their invention to the necessity of allowing the Nile water to deposit its thick sediment in vases, which could not be moved without again rendering it turbid, whether by inclining the vessel, or dipping a cup into it with the hand.

Julius Pollux says they were used for tasting wine *; and Heron of Alexandria, the first writer of consequence who mentions them, and who lived under Ptolemy Evergetes II., shows them to have been employed as hydraulic machines, on a grand scale, for draining lands, or conveying water over a hill from one valley to another. Their name, siphon, is evidently oriental, and derived from the word *siph* or *sif*, to "imbibe," or "draw up with the breath," analogous to, and the origin of, our own expression "to sip."

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* Jul. Poll. Onom. vi. 2. and x. 20.

Of the numerous inventions to which the Egyptians may lay claim, we learn little from the works of ancient authors; but their skill in various branches of art are highly extolled by those* who visited, or were acquainted with, the country.

Herodotus† ascribes the origin of geometry to the necessity of ascertaining every successive year the quantity of land, increased, or diminished, by accidents arising from the inundation of the Nile; which is, indeed, not inconsistent with reason: but the historian is wrong in limiting the date of land surveying to the age of Sesostris, since it was evidently known long before his time; and so ancient did the Egyptians consider it, that they ascribed its invention to Thoth.‡

Anticlides pretends that Mœris was the first to lay down the elements of that science, which he says was perfected by Pythagoras; but the latter observation is merely the result of the vanity of the Greeks, which claimed for their countrymen, (as in the case of Thales, and many other instances,) the credit of enlightening a people on the very subjects which they had visited Egypt for the purpose of studying.

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* Diodorus (i. 74.) says that the arts were carried to a higher degree of perfection and excellence among the Egyptians than any other people; which he ascribes to the artisans being confined to their own occupations. The Chinese have shown that, like many other ideas, this is plausible in theory, but bad in practice.

† Herodot. ii. 102.

‡ Plato in Phædro.

The discovery of the pole, the sundial, and the division of the day into twelve hours, are said by Herodotus to have been derived by the Greeks from the Babylonians. Of the two former we have no indication in the sculptures, to prove the epoch when they were known in Egypt; but there is reason to believe, that the day and night were divided, each into twelve hours, by the Egyptians, some centuries before that idea could have been imparted to the Greeks from Babylon.*

Sufficient data cannot, of course, be expected from the sculptures of the tombs, and the accidental introduction of their occupations, to enable us to form an accurate opinion respecting the extent of their knowledge, the variety of their inventions, or the skill of their workmen in different branches of art. The objects buried with the dead were frequently mere models of those they used; and the pains taken in making them depended on the sums expended by the friends of the deceased, after his death. It was left to their good intentions, or their superstitious feelings, to decide of what quality they should be, or what labour should be bestowed upon them; and if the kind regards of a friend frequently induced some to incur considerable expense in providing such objects, many, on the other hand, were less scrupulous in the last duties to their departed relative. The former purchased ornaments of the most costly materials, as agate *, basalt, granite, alabaster, onyx, jasper, gold, and precious stones; the latter were contented with common porcelain, wax, limestone, or wood. But even the best which have been found in the tombs, are evidently of inferior quality; and like their vases, and chairs, none have been discovered equal in beauty to those represented in the paintings, with the exception of a few rings and some female ornaments, which had been actually worn by the deceased.

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* It is remarkable that no mention of hours is made in the Bible till the time of Daniel. Dan. iii. 6. The Hebrew word is שעה Sāh, as in Arabic.

The paintings, again, indicate a very small portion of their inventions: many, with which we know they were acquainted, are omitted; and the same remark applies to some of their most common occupations, to the animals they kept, and to the ordinary productions of their country. No exact notion can even be formed of their costume and the dresses of various grades, either among men or women, though so frequently represented; partly owing to their conventional style of drawing figures, partly to their want of skill in depicting drapery; which, as I have observed, was merely added to the figure, without forming part of the subject described; it is therefore only the most simple portion of their dress which can be understood.

DRESSES.

Ordinary workmen, and indeed all the lower

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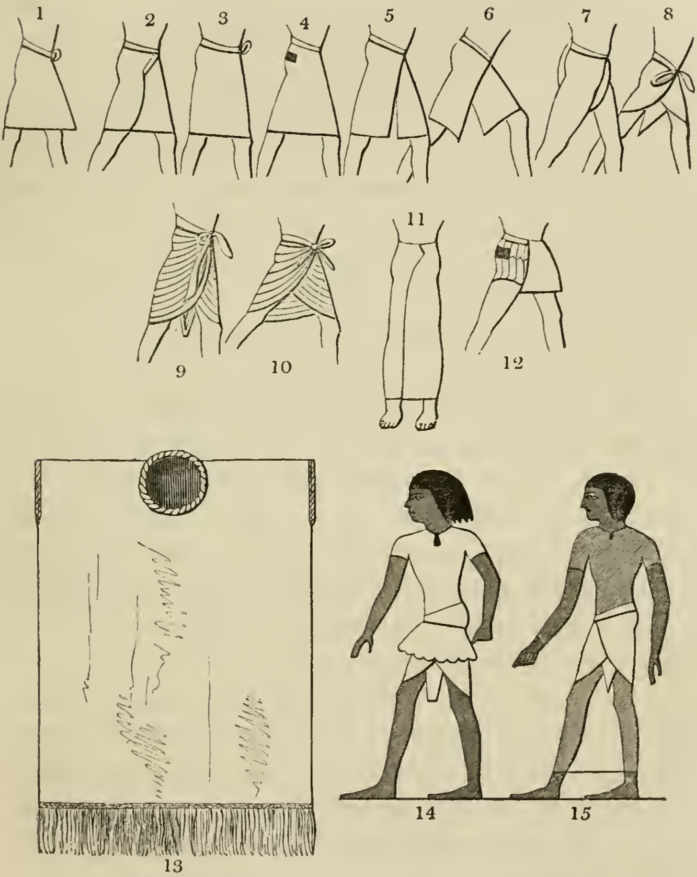
* So called from Achate a river in Sicily. Theophr. § 58.

orders, were clad in a sort of apron, or kelt, sometimes simply bound round the loins, and lapping over in front*; and others had short drawers, extending halfway to the knee.† The same kind of apron was worn by the higher orders, under



No. 395. Men's Dresses. 13 a shirt from the work of Prof. Rosellini.

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* *Vide* wood-cut, No. 395.

† *Vide* wood-cut, No. 354. *fig.* 1. *a.* and *fig.* 2. *a.*

an ample dress of fine linen, reaching to the ankles*, and provided with large sleeves.† The apron was generally fastened by a girdle, or by a sort of sash, tied in front in a bow or knot‡: it was sometimes folded over, with a centre-piece falling down in front, beneath the part where it overlapped; and some of the poor classes, while engaged in laborious occupations, were contented with a roll of linen passed between the legs, from the back to the front of the girdle§; which is frequently used at this day by the peasants, when drawing water by the *shadoof.*

Herodotus mentions|| some Egyptian dresses, which he describes of linen, with a fringe on the border around the legs, called *calasiris;* over which they wore a cloak of white wool, similar, no doubt, to the *bornous*¶ of the present day, so common in Egypt and the coast of Barbary. I never remember seeing this cloak represented, except in the dresses worn by the captives of the Rot-ñ-no**, who appear to have something of the kind over their inner garments.

The same custom of edging their dresses with fringes was common to the Israelites, who were ordered†† to make them "in the borders of their garments;" "a blue riband" being "put upon the fringe." These fringes, as already observed, were

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* *Vide* wood-cut, No. 279. *figs.* 5, 6. and pl. 12. *fig.* 14.

† *Vide* wood-cut, No. 341. and 116. *fig.* 5.

‡ *Vide* wood-cut, No. 78. Vol. II. p. 10.

§ *Vide* wood-cut, No. 395. *fig.* 7.

|| Herodot. ii. 81.

¶ The *bornous* is a woollen cloak, open in front, and buttoned over the breast. It has a hood.

** *Vide* woodcut, No. 72. Vol. I. p. 403.

†† Numb. xv. 38.

only the ends of the threads composing the woof, left in order to prevent the cloth unravelling; and the blue riband added by the Israelites, was intended to strengthen it, and prevent its tearing.

I have noticed the woollen cloak*, and the prohibition which Herodotus says was issued against their wearing it, when they entered a temple, or being buried in cloths of that quality; and I have also observed, that though cotton garments were sometimes used, the preference was given to linen, which was considered more conducive to cleanliness and health. With regard to the calasiris mentioned by Herodotus, it does not appear that they were very generally used; but dresses are occasionally represented in the paintings with a fringe†, and pieces of cloth have been found in the tombs with this kind of border.

Some wore a sort of shirt with loose or tight sleeves, open at the neck, where it was tied with strings‡; and except that it was of linen, instead of wool, it was not unlike the *bisht* of the modern inhabitants of Upper Egypt.

The dresses of the priests and persons of rank consisted of an under garment, similar to the apron already mentioned, and a loose upper robe with full sleeves, secured by a girdle round the loins; or of the apron, and a shirt with short tight sleeves, over which was thrown a loose robe, leaving the right arm exposed.§ Sometimes a priest, when officiating in the temple, laid aside the upper

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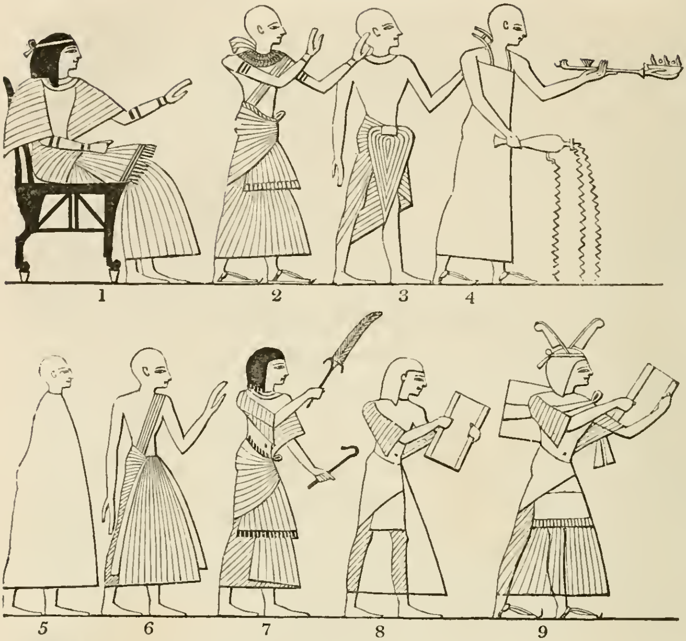
* Vol. I. p. 280.

† *Vide* wood-cut, No. 396. 1. 7. 9.; and 398. 1.

‡ *Vide* woodcut, No. 90., *fig.* 5. Vol. II. p. 46., and No. 387.

§ *Vide* wood-cut, No. 417. *fig.* 1.



No. 396. Dresses of Priests. *Thebes.*
8, 9, hierogrammat, or sacred scribe.

vesture, and was satisfied to wear an ample robe bound round the waist, which descended over the apron to his ancles; and occasionally he put on a long full garment, reaching from below the arms to the feet, and supported over the neck with straps.* Others again, in the sacred processions, were entirely covered with a dress of this kind, reaching to the throat, and concealing even the hands and arms.†

The costume of the hierogrammat, or sacred scribe, consisted of a large kelt or apron, either tied in front, or wound round the lower part of the body; and the loose upper robe with full sleeves, which, in all cases, was of the finest linen: he had sometimes one or two feathers on his head, as described by Clement of Alexandria* and Diodorus.†

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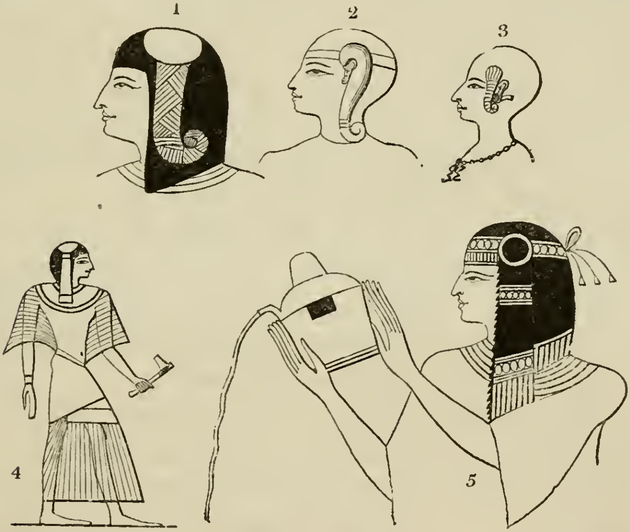
* Wood-cut, No. 396. *fig.* 4.

† *Vide* woodcut, No. 396. *fig.* 5.

The hieraphori, when bearing the sacred emblems, wore a long full apron reaching to the ankles, tied in front with long bands, and a strap, also of linen, passed over the shoulder to support it‡; but they had no upper robe on these occasions. Sometimes a priest who offered incense was clad in this long apron, and the full robe with sleeves; sometimes only in the former: and the dresses of the others in like manner varied on different occasions.



No. 397. Princes and Children. *Thebes.*

1, head-dress of a prince. 2, and 3, lock of hair worn by children. 4, dress of a son of Remeses III. 5, head-dress of a prince, Remeses.

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[*] "The Hierogrammat walks first, having feathers on his head, and a book in his hand." Clem. Alex. Str. 5, 6.

[†] Diodor. i. 87. "The sacred scribes wear a purple fillet and hawk's feather on their head." *Vide* woodcut, No. 396. *fig.* 9.

[‡] *Vide* woodcut, No. 396. *fig.* 6.

The princes wore a dress very like that of the sacred scribe, the apron wound round the body, and divided into three different folds, over which was a garment with large sleeves; but their distinguishing mark was a peculiar badge at the side of the head, descending to the shoulder, and frequently adorned and terminated with a gold fringe. This, I suppose, to have contained the lock of hair, indicative of youth, which is seen in the statues of Harpocrates, and frequently represented on the heads of children. For though the Egyptians were shaved, and wore wigs and other coverings to the head, children were allowed to leave certain locks of hair*; and if the sons of the king, long before they arrived at the age of manhood, had abandoned this youthful custom, the badge was attached to their head-dress as an emblem of their rank as princes; or really to show they had not, during the life time of their father, arrived at *kinghood;* on the same principle that a Spanish prince, of whatever age, continues to be styled an "infant."

I have already noticed† those priests who wore a leopard skin; which some have mistaken for that of the *nebris* or fawn, and improperly ascribed to Bacchus. It was generally thrown over their dress; its fore-legs sometimes made to form sleeves for the arms: and the robes worn beneath it varied at different times. It was usually confined to the high-priests, who superintended the sacrifices, and processions of the sacred boats or arks; who presented the offerings at the altar of the gods, and at the funerals of individuals; or who anointed the king at his coronation: and the same badge was assumed by the monarch when officiating on similar occasions.

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* *Vide* wood-cuts, No. 397. *fig.* 3. No. 402. and No. 195. *fig.* 2.

† Vol. I. p. 279.

The robes of the sovereign varied, of course, according to his immediate occupation. When engaged as high-priest, they much resembled those worn by the principal functionaries of the sacerdotal order, with the exception of the apron and head-dress, which were of peculiar form, and belonged exclusively to his rank as king.

This apron was richly ornamented in front with lions' heads, and other devices, probably of coloured leather; and the border was frequently formed of a row of asps, the emblems of royalty. Sometimes the royal name, with an asp on each side, as *supporters*, was embroidered upon it, the upper part being divided into square compartments of different colours; but it is not improbable, that this formed an appendage to the girdle, rather than to the apron; and several straps falling down at the side of the centre-piece, show that it was tied in front, and came over the folds of the apron, and even of the upper robes.

The headdress of the king, on state occasions, was the crown of the upper or of the lower country, or the *pshent*, the union of the two. Every king, after the sovereignty of the Thebaïd and Lower Egypt* had become once more vested in the same person,

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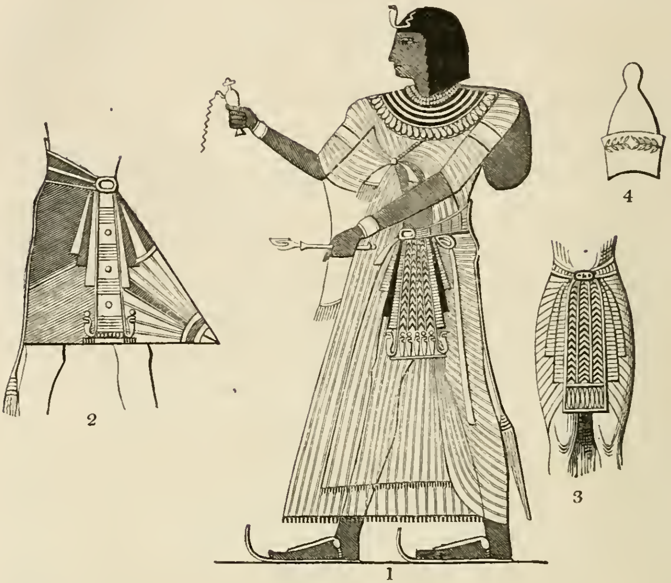
* *Vide suprà*, p. 283.



No. 398. Dress of the King.

2, 3, the kings apron. 3, is from a statue of Amunoph III. in the museum at Alnwick Castle. 4, wreath of the crown of Sabaco's statue at the Isle of Argo.

put on this double crown at his coronation; and we find in the grand representation given of this ceremony at Medeenet Haboo, that the principal feature of the proclamation, on his ascension to the throne, was the announcement to the four sides of the world, that "Remeses had put on the crown of the upper and lower country."

I have already noticed this interesting subject*, and should not have failed to introduce a copy of it here, if the size of this work had not been too limited. I hope, however, to be able, at a future time, to present it with several other curious sculptures, in a form better suited to them, to which I shall refer the reader.

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* Egypt and Thebes, p. 63.; and *supra*, p. 288. 289.

He even wore his crown during the heat of battle[*], like the kings of olden days in Europe; sometimes merely a wig; but a helmet[†] made apparently of woollen stuff with a thick nap, not very unlike the modern Persian cap, was generally preferred; and, in religious ceremonies, he put on a striped head-dress, probably of linen, which descended in front over the breast, and terminated behind in a sort of *queue* bound with riband.[‡]

When crowned, the king invariably put on the two crowns at the same time, though on other occasions he was permitted to wear each separately, whether in the temple, the city, or the field of battle; and he even appeared in his helmet[§] during the ceremonies in honour of the gods. On some occasions he wore a short wig, on which a band was fastened, ornamented with an asp, the emblem of royalty.[‖]

It may appear singular, that so warm a covering to the head should have been adopted in the climate of Egypt; but when we recollect that they

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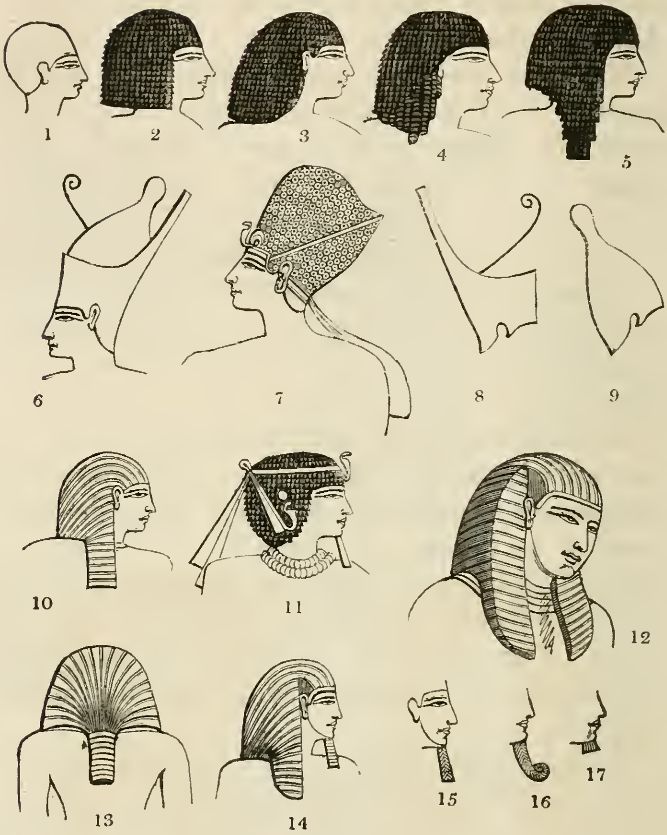
[*] For the head-dress and costumes of soldiers, *vide* Vol. I. p. 329. *et seq.*

[†] The Egyptian helmet had no crest. I have mentioned the origin of crests in Vol. I. p. 331. The Greek crest was copied from the mane of a horse; and in illustration of this we frequently find the scales or cheek-pieces of the helmet made to imitate the ears of that animal, which, when raised and turned up, project from the upper part on either side. Conf. Homer, i. 382., the helmet of Achilles with a horse's tail, "*ιππουρις τρυφαλεια*;" and Virg. Æn. x. 369. "cristaque hirsutus equina."

[‡] *Vide* wood-cut, No. 399. *fig.* 13.

[§] Conf. Herodot. ii. 151. *vide* Vol. I. p. 144.

[‖] *Vide* woodcut, No. 399. *fig.* 11.

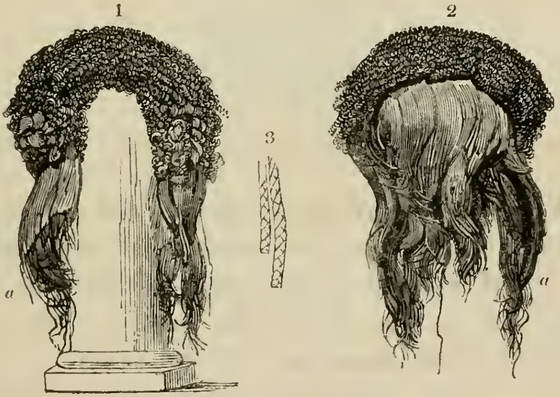


No. 399. Head-dresses.

1, a close cap. 2, 3, 4, 5, wigs. 6, the crown of the upper and lower country, or 9 and 8 united. 10 to 14, royal head-dresses. 15, beard of a god. 16, of a king. 17, of a private individual of rank.

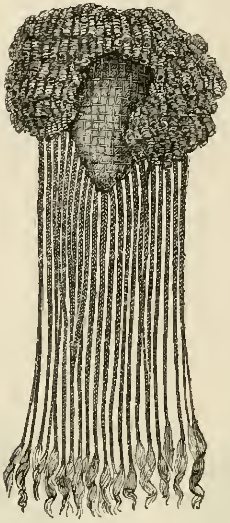
always shaved the head, and that the reticulated texture of the groundwork, on which the hair was fastened, allowed the heat of the head to escape, while the hair effectually protected it from the sun, it is evident that no better covering could have been devised, and that it far surpassed in comfort and coolness the modern turban; which is always found by those who are in the habit of wearing it, to be very agreeable in hot weather, provided all the particulars are attended to, which the Turks find so essential, but which those Europeans who merely put it on for effect, too often neglect.

The upper portion of the wig was frequently made with curled, and not with plaited hair, this last being confined to the sides and lower part, as is the case in the wigs preserved in the British and Berlin museums; but the whole was sometimes composed of a succession of plaits, commencing from the centre of the crown, extending downwards, and increasing in length towards the bottom.



No. 400. Front and back of an Egyptian wig in the British Museum. 3, shows the appearance of the long plaits, *a. a.*

Some smaller wigs, worn by persons of rank, consisted of short locks of equal length, arranged in uniform lines; imitations of which appear to have been made in woollen or other stuffs, under the denomination of false wigs, for the use of those who could not afford the more expensive quality of real hair.



No. 401. Wig, about 2⅝ feet in length, seen in front. *Berlin Museum.*

Wigs were worn both within the house and out of doors, like the turban of the present day; and a priest might even officiate on some occasions in his wig. At parties, the head-dress of every guest was bound with a chaplet of flowers, and ointment* was put upon the top of the wig, as if it had really been the hair of the head†; and one instance occurs of a wreath of leaves placed round the crown of a king, on a statue of

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* *Vide* Athen. xv. 13. and Juvenal, Sat. xv. 50.
"Unguenta, et flores, multæque in fronte coronæ."

† *Vide* Vol. II. p. 214. 218.

Sabaco, in Ethiopia, precisely similar to those worn by the Romans.*

The Egyptians, says Herodotus, "only let the hair of their head† and beard grow in mourning, being at all other times shaved‡;" which agrees perfectly with the authority of the Bible§, and of the sculptures. So particular, indeed, were they on this point, that to have neglected it was a subject of reproach and ridicule; and whenever they intended to convey the idea of a man of low condition, or a slovenly person, the artists represented him with a beard.|| It is amusing to find that their love of caricature was not confined to the lower orders, but extended even to the king; and the negligent habits of Remeses VII. are indicated in his tomb at Thebes, by the appearance of his chin, blackened by an unshorn beard of two or three days' growth. But it was likewise given as the test of hardships undergone in a severe campaign; and the warlike character of Remeses the Great is pointed out in the same manner.

The Egyptians did not confine the privilege of shaving to freeborn citizens, like the Romans, who obliged slaves to wear their beards and hair long, and only permitted them the use of a cap¶

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* *Vide suprà*, p. 352. wood-cut, No. 398., *fig.* 4.

† Diodorus states, that they suffered the hair to grow when on a journey; but this was probably on accomplishing a vow. Diod. i. 18.

‡ Herodot. ii. 36. and iii. 12.

§ Gen. xli. 14. Joseph, when sent for by Pharaoh from prison, "shaved himself, and changed his raiment."

|| *Vide* wood-cut, No. 115. Vol. II. p. 127.

¶ Livius, xlv. 44. "Pileatum, capite raso . . . . . libertum."

after they had been enfranchised: and though foreigners, who were brought to Egypt as slaves, had beards on their arrival in the country, we find that so soon as they were employed in the service of this civilised people, they were obliged to conform to the cleanly habits of their masters; their beards and heads were shaved; and they adopted a close cap.

The priests were remarkable for their love of cleanliness, which was carried so far, that they shaved the whole body every three days, and performed frequent daily ablutions, bathing twice a day and twice during the night.* It was not confined to their order; every Egyptian prided himself on the encouragement of habits, which it was considered a disgrace † to neglect: we can, therefore, readily account for the disgust they felt on seeing the squalid appearance and unrefined habits of their Asiatic neighbours, whose long beards were often the subject of ridicule to the Egyptian soldier; and for their abhorrence of the bearded and long-haired Greeks; which was so great, that, according to Herodotus‡, "no Egyptian of either sex would on any account kiss the lips of a Greek, make use of his knife, his spit and cauldron, or taste the meat of an animal which had been slaughtered by his hand." The same habits of cleanliness are also indicated by the "changes of raiment" given by Joseph[*] to his brethren, when they set out to fetch their father to Egypt.

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* Herod. ii. 37. Porphyry says thrice a day, and a nocturnal ablution occasionally.

† Herod. ii. 37. Plut. de Is. s. 3.

‡ Herod. ii. 41. and 91.

Barbers may be considered the offspring of civilisation; and as a Roman youth, when arrived at the age of manhood, cut off his beard, and consecrated it to some deity, as a token of his having emerged from a state of childhood, so a people, until they have adopted the custom of shaving, may be supposed to retain a remnant of their early barbarism.

The Romans, at first, like other people, allowed their beards to grow, until about 454 years after the building of the city (299 B.C.), when P. Ticinius Mena, having brought barbers from Sicily, introduced the custom at Rome; and, as Pliny states[†], "Scipio Africanus was the first Roman who shaved every day." They resembled the Egyptians rather than the Greeks in this respect, and in the habit of allowing the hair of the head[‡] and beard to grow in mourning; the Greeks, on the contrary, shaving themselves on those occasions.

The prejudice of these last in favour of long hair[§] seems to be retained to the present day; for though the modern Greeks have adopted a *moslem* custom, and wear the red *faz* of the coast of Barbary, they have remained insensible to the comfort and cleanliness of shaving, and have preferred the inconsistency of covering the head with a close cap*, and cherishing the growth of long hair.

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[*] Gen. xlv. 22. "To all of them he gave each man changes of raiment; but to Benjamin he gave three hundred pieces of silver, and five changes of raiment."

[†] Plin. vii. 59.

[‡] And in youth: whence children are called "Capillatos" by Petronius Arbiter (Satyr.) *Vide* Martial. Epigr. lxii. lib. 10.

[§] Conf. Homer, Il. ii. 11. "*καρηκομοωντας Αχαιους*," viii. 53., &c. Apollo was represented with long hair. *Vide* 1 Cor. xi. 14.

With the Egyptians it was customary to shave the heads even of young children, leaving only certain locks† at the front, sides, and back; and those of the lower classes were allowed to go out in the sun with the head exposed, without the protection of a cap; which is the reason assigned by Herodotus‡ for the hardness of the Egyptian skulls, compared with those of other people. "I became acquainted," says the historian, "with a remarkable fact, which was pointed out to me by the people living in the neighbourhood of the field of battle, where the Egyptians and the army of Cambyses fought; the bones of the killed being still scattered about, those of the Persians on one side, and of the Egyptians on the other. I observed that the skulls of the former were so soft, that you could perforate them with a small pebble; while those of the latter were so strong, that with difficulty you could break them with a large stone. The reason of which, as they told me, and I can readily believe it, is that, the Egyptians being in the habit of shaving their heads from early youth, the bone becomes thickened: and hence, too, they are never bald; for, certainly, of all countries, no where do you see fewer bald people than in Egypt. The Persians, on the contrary, have soft skulls, in consequence of their keeping the head covered from the sun, and enveloped in soft caps. I also observed the same of those who were killed in the battle between Achæmenes and Inarus the Libyan."

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* The Greeks ridicule and abhor our unbecoming hats, but there is not the same objection to them on the score of cleanliness.

† As with the Chinese, and modern Egyptians. *Vide* wood-cut No. 195. *fig.* 2.

‡ Herod. iii. 12.

It was usual for the lower orders to work in the sun without any covering to the head, as the modern peasants of Egypt, who appear to inherit from their predecessors skulls of uncommon hardness; and we see the same class of persons represented in the paintings with and without a cap, whether in the house or in the open field.

Herodotus says*, when the Egyptians perform their vows, they shave the heads of their children, either entirely, or half, or only a third; and putting the hair and some silver into a pair of scales, dedicate an equal weight of the latter to the animal which is sacred to the deity they invoke. This does not, however, imply that they left the whole head unshaven; and the hair to which he refers was probably the long pendent locks represented in the Theban sculptures.

Persons of all classes occasionally wore caps, some of which were large, others fitting tight to the head; but these last were considered far less becoming than the wig, and suited rather to the lower orders than to persons of rank. Women always wore their own hair†, and they were not shaved even in mourning, or after death.

The use of wigs was not confined to the Egyptians of all people of antiquity; the Romans, under the emperors, also adopted a sort of peruke, called *capillamentum* or *galerus*, though it seems rather to have been worn by women than men; and Juvenal* describes Messalina putting on a wig of flaxen hair to conceal her own black locks, when she left the palace in disguise.

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* Herod. ii. 65.

† *Vide* 1 Cor. xi. 6.

The most singular custom of the Egyptians was that of tying a false beard upon the chin, which was made of plaited hair, and of a peculiar form, according to the person by whom it was worn. Private individuals had a small beard, scarcely two inches long; that of a king was of considerable length, square at the bottom; and the figures of gods were distinguished by its turning up at the end. No man ventured to assume, or affix to his image, the beard of a deity; but after their death, it was permitted to substitute this divine emblem on the statues of kings, and all other persons who were judged worthy of admittance to the Elysium of futurity; in consequence of their having assumed the character of Osiris, to whom the souls of the pure returned, on quitting their earthly abode.

The form of the beard, therefore, readily distinguishes the figures of gods and kings, in the sacred subjects of the temples; and the allegorical connection between the sphinx and the monarch is pointed out by its having the kingly beard, as well as the crown, and other symbols of royalty.

The dresses of children of the lower classes were very simple; and as Diodorus † informs us, the expenses incurred in feeding and clothing them amounted to a mere trifle. "They feed them," he says, "very lightly, and at an incredibly small cost;

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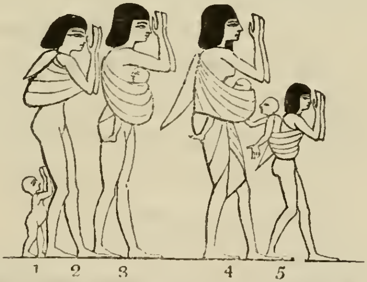
* Juven. Sat. vi. 120. "Et nigrum flavo crinem abscondente galero."
† Diodor. i. 80.

giving them a little meal of the coarsest and cheapest kind, the pith of the papyrus, baked under the ashes, with the roots and stalks of some marsh weeds, either raw, boiled, or roasted; and since most of them are brought up, on account of the mildness of the climate, without shoes, and, indeed, without any other clothing *, the whole expense incurred by the parents does not exceed 20 drachmæ (13 shillings) each; and this frugality is the true reason of the populousness † of Egypt." But the children of the higher orders were often dressed like grown persons, with a loose robe, reaching to the ankles, and sandals. ‡

Infants do not appear to have been swaddled, as among the Jews, Greeks, and Romans. When too young to walk, if taken out by a mother or nurse, they were carried in a shawl, suspended at her back, or before her; a custom still retained by the women of the Moghrebin Arabs; and in Ethiopia they were carried in baskets, supported



No. 402. Women carrying their children in a funeral procession. *Thebes.*

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* *Vide* wood-cut, No. 195. *fig.* 2. and No. 402.

† Pliny might attribute it to the Egyptian women having occasionally *seven* children at a birth. He gives his authority, Trogus (vii. 3.).

‡ *Vide* plate 12. *fig.* 1.

at the mother's back by a band passing over her forehead.*

Sometimes, though nearly or entirely naked, the neck of an Egyptian child was decorated with a string of beads; and occasionally a *bulla*, or charm, was suspended in the centre, representing the symbol of truth and justice, which has been supposed also to indicate the heart, and is usually found in the balance of the judgment scenes, as a representative of the good works of the deceased. A *bulla* of this kind was worn by the youthful deity Harpocrates.†

It was probably of gold, or hard stone, like those of the Romans‡; and others worn by the poorer classes, as at Rome, and in modern Egypt, were of leather. They were supposed to prompt the wearer to virtue and wisdom, to keep off the evil eye, or to avert misfortune; and superstition induced many to appeal to them in danger, and derive from them omens of forthcoming events. Sometimes a charm consisted of a written piece of papyrus tightly rolled up, and sewed into a covering of linen, or other substance, several of which have been found at Thebes; and emblems of various deities were appended to necklaces for the same purpose.

Ladies and men of rank paid great attention to the beauty of their sandals: but on some occasions

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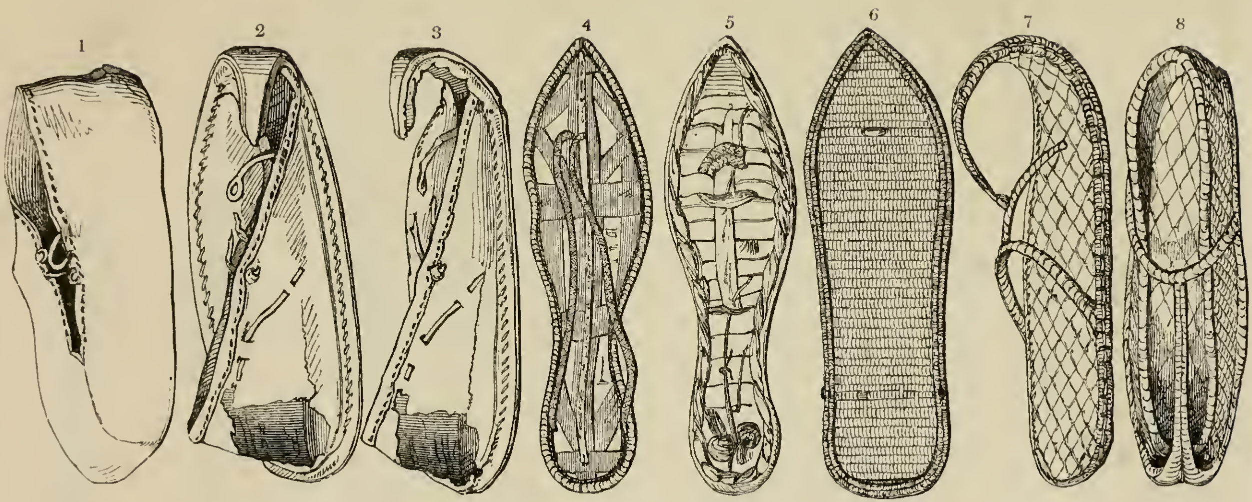
* *Vide* wood-cut, No. 73. Vol. I. p. 404.

† *Vide* my Materia Hieroglyphica, *Pantheon*, plate 17. *fig.* 3.

‡ The Roman and Etruscan children had sometimes three or four *bullas*, as we see from statues that have been found. Conf. Virg. Æn. xii. 942. Plin. (xxxiii. i.) explains who wore the golden *bulla*, and who the leathern *lorum*. *Vide* Juv. Sat. xiii. 33., and Pers. Sat. v. 31. &c.

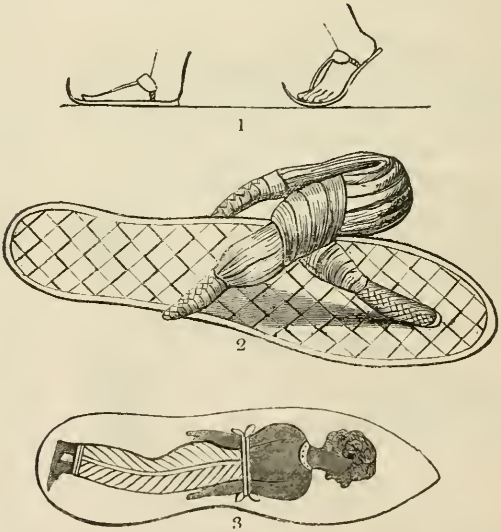


No. 403. Sandals and shoes found in Egypt.

1, 2, 3, shoes of green leather, probably of Greek time. Mr. Salt's collection. 4, 5, upper and lower side of a pair of sandals, made of palm leaves and the papyrus 11 inches long and 3 broad. In the museum of Alnwick Castle. 6, sole of a sandal 1 foot long, and $3\frac{3}{4}$ inches broad. Alnwick Castle. 7, a sandal. and 8, a sandal with sides like a shoe, both in the Berlin collection.

those of the middle classes who were in the habit of wearing them, preferred walking barefooted; and, in religious ceremonies, the priests frequently took them off, while performing their duties in the temple.

The sandals varied slightly in form; those worn by the upper classes, and by women, were usually pointed and turned up at the end, like our skaits, and many Eastern slippers of the present day. Some had a sharp flat point, others were nearly round. They were made of a sort of woven, or interlaced work, of palm leaves and papyrus stalks, or other similar materials; sometimes of leather; and were frequently lined within with cloth, on which the figure of a captive was painted; that



No. 404. Sandals. *Berlin Museum.*

1, from the sculptures. 2, in the Berlin Museum; made of the papyrus.
3, figure of a captive on the sole.

humiliating position being considered suited to the enemies of their country, whom they hated and despised. An idea agreeing perfectly with the expression which so often occurs in the hieroglyphic legends, accompanying a king's name, when his valour and victories are recorded on the sculptures: "You have trodden the impure Gentiles under your powerful feet." *

Shoes, or low boots, were also common in Egypt, many having been found at Thebes†; but these I believe to have been of late date, and to have belonged to Greeks; for, since no persons are represented in the paintings wearing them, except foreigners‡, we may conclude they were not adopted by the Egyptians, at least in a Pharaonic age. They were of leather, generally of a green colour; laced in front by thongs, which passed through small loops on either side; and were principally used, as in Greece and Etruria, by women.

The dresses of women consisted sometimes of a loose robe or shirt, reaching to the ankles, with tight, or full sleeves, and fastened at the neck like those of the men, with a string; over which they wore a sort of petticoat, secured at the waist by a girdle; and this, in mourning, while bewailing the death of a relative, was frequently their only dress.§

Such was the costume of the lower classes of women; and, sometimes indeed, as at the present

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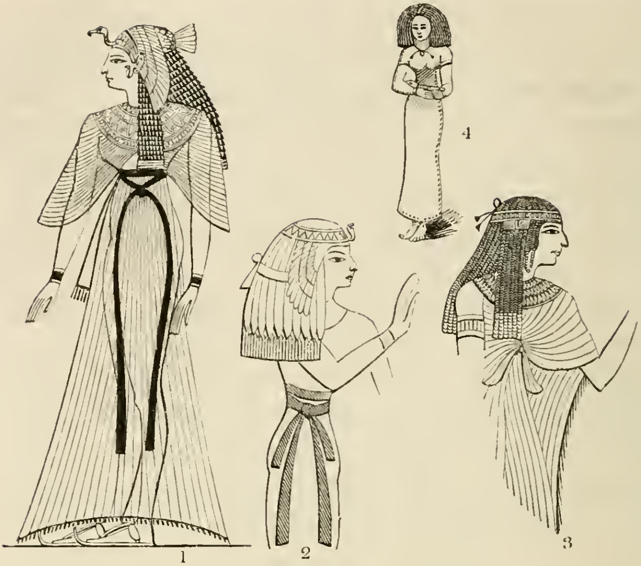
* *Vide* wood-cut, No. 404. *fig.* 3.

† *Vide* wood-cut, No. 403. *figs.* 1, 2, 3.

‡ *Vide* plate 14.; and wood-cut No. 64. *fig.* 1.

§ *Vide* wood-cut, No. 7., Vol. I. p. 256. and Herodot. ii. 85.



No. 405. Dresses of women.

The sash in figs. 1, and 2, though represented at the side, is to be understood as tied in front. In fig. 3, the side hair appears to be fixed by a comb; and before it, on the cheek, the short hair is arranged in separate plaits. 4, shows the shirt tied at the neck: it is a terra cotta statue.

day it consisted merely of the loose shirt or robe, without shoes or sandals.

The higher orders wore a petticoat, or gown, secured at the waist by a coloured sash, or by straps over the shoulders; and above this was a large loose robe, made of the finest linen, with full sleeves *, and tied in front below the breast: and during some religious ceremonies† the right arm was taken out of the sleeve, and left exposed as in the funeral processions. The petticoat or gown was of richly coloured stuff, presenting a great variety of patterns, not unlike our modern chintzes, the

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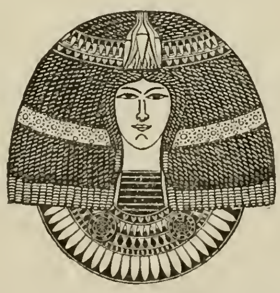
* *Vide* a group of women in plate 4. of my Materia Hierog. part 2.; and wood-cut, No. 8. *fig.* 5.

† *Vide* wood-cut, No. 8. *figs.* 1, 2, and 3., Vol. I. p. 260.

most elegant of which were selected for the robes of deities and the dresses of queens.

Slaves or servants were not allowed to wear the same costume as ladies, and their mode of dressing the hair was different. They generally bound it at the back part of the head, into a sort of loop, or ranged it in one or more long plaits at the back, and eight or nine similar ones were suffered to hang down at either side of the neck and face.* They wore a long tight gown, tied at the neck, with short close sleeves, reaching nearly to the elbow: and sometimes a long loose robe was thrown over it, when employed to dance, or to present themselves on festive occasions.

Ladies wore their hair long, and plaited. The back part was made to consist of a number of strings of hair, reaching to the bottom of the shoulder blades, and on each side other strings of the same length descended over the breast. The hair was plaited in the triple plait, the ends being left loose; or, more usually, two or three plaits were fastened together at the ex-



No. 406. Head-dress of a lady, from a mummy case.

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* *Vide* wood-cuts, Nos. 236. and 280.

tremity by woollen string of corresponding colour. Around the head was bound an ornamental fillet, with a lotus bud, by way of *feronière*, falling over the forehead; and the strings of hair, at the sides, were separated and secured with a comb, or a band, ornamented in various ways according to the fancy of the wearer: and occasionally a round stud, or pin, was thrust into them at the front.

The short hair at the side of the face, which the ingenuity of ancient Roman*, and modern European ladies, has, by the aid of gum, compelled to lie in an immovable curve upon the cheek, was intervoven with several of its longer neighbours; and these, being bound together at the end with string, fell down before the earring which they partially concealed. Many of the mummies of women have been found with the hair perfectly preserved, plaited in the manner I have mentioned; the only alteration in its appearance being the change of its black hue, which became reddened by exposure to great heat, during the process of embalming.

The earrings, most usually worn by Egyptian ladies, were large, round, single hoops† of gold, from one inch and a half, to two inches and one-third, in diameter, and frequently of a still greater size; or made of six rings soldered together‡: sometimes an asp, whose body was of gold set with precious stones, was worn by persons of rank, as a fashionable caprice; but it is probable that this emblem of majesty was usually confined to members of the royal family.

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* This little *accroche cœur* appears in the busts of several Roman ladies, of the time of the empire.

† *Vide* wood-cut, No. 412., *fig.* 5. and 272.

‡ *Vide* wood-cut, No. 412., *figs.* 6 and 7.

Earrings of other forms have also been found at Thebes, but their date is uncertain; and it is difficult to say if they are of an ancient Egyptian age, or of Greek introduction. Of these, the most remarkable are a dragon*, and another of fancy shape which is not inelegant.† Some few were of silver, and plain hoops, like those made of gold already noticed, but less massive, being of the thickness of an ordinary ring: at one end was a small opening, into which the curved extremity of the other caught after it had been passed through the ear‡; and others were in the form of simple studs.§

Women wore many rings, sometimes two and three on the same finger: the left was considered the hand || peculiarly privileged to bear those ornaments; and it is remarkable, that its third finger was decorated with a greater number than any other, and was considered by them, as by us, *par excellence*, the ring finger ¶; though there is no evidence of its having been so honoured at the marriage ceremony.** They even wore a

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* Wood-cut, No. 408. *fig.* 10. not unlike one of the Chinese dragons.

† *Vide* wood-cut, No. 408. *fig.* 21.

‡ *Vide* wood-cut, No. 412. *fig.* 5.

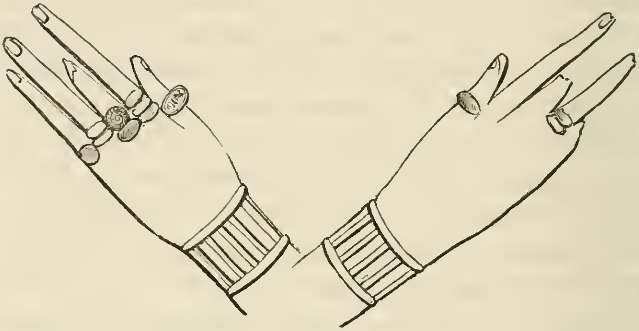
§ *Vide* woodcut, No. 397. *fig.* 4.

|| The same with the Romans (Plin. xxxiii. i.); they wore rings on all but the middle finger. This last was preferred by the Gauls and Britons.

¶ *Vide* Plin. xxxiii. 1. Of the fingers on which rings were worn. "Singulis primo digitis geri mos fuerat, qui sunt minimis proximi."

** Plin. (xxxiii. i.) mentions the iron ring worn by a person betrothed: "etiam nunc sponsæ annulus ferreus mittitur, isque sine gemmâ." He thinks they had no rings in Homer's time. But in Egypt they were used long before.

ring on the thumb; and I have seen, upon the right hand of a wooden figure, a ring on the thumb, and two on the third finger; and upon the left, one upon the thumb and little finger; two on the fore and second finger; and three on the third: as may be seen in the accompanying wood-cut.



No. 407. Hands of a wooden figure of a woman. On the lid of a mummy case in Mr. Salt's collection, now in the British Museum.

Some rings were simple; others were made with a scarabæus, or an engraved stone; and they were occasionally in the form of a snail, a knot, a snake, or some fancy device. They were mostly of gold; and this metal seems to have been always preferred to silver, for rings, and other articles of jewellery. Silver rings, however, are occasionally met with; and two in my possession, which were accidentally found in a temple at Thebes, are engraved with hieroglyphics, containing the name of the royal city.

Bronze was seldom used for rings. Some have been discovered of brass *, and iron, (of a Roman time, as I before observed) †; but ivory and blue

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* I am not sure if the alloy in them is zinc. I suspect it to be gold.

† Chap. ix. p. 236. *Vide* Plin. xxxiii. 3. and xxxiii. i. on iron rings.

porcelain were the materials of which those worn by the lower classes were usually made. The scarabæus was the favourite form both for rings, and the ordinary ornaments of necklaces; in some, the stone, flat on both faces, turned on pins, like many of our seals at the present day; and the ring itself was bound round at each end, where it was inserted into the stone, with gold wire. This was common not only to rings, but to signets, and was intended for ornament as well as security.

One of the largest signets I have seen, was in the possession of a French gentleman at Cairo, which contained twenty pounds' worth of gold.

It consisted of a massive ring, half an inch in its largest diameter, bearing an oblong plinth, on which the devices were engraved *, one inch long, $\frac{6}{10}$ths in its greatest, and $\frac{4}{10}$ths in its smallest breadth. On one face was the name of a king, the successor of Amunoph III., who lived about B. C., 1400; on the other a lion, with the legend "lord of strength," referring to the monarch: on one side a scorpion, and on the other a crocodile.

Two cats sitting back to back and looking round towards each other, with an emblem of the goddess Athor between them, seem to have been a favourite device on gold rings; and I have seen three or four of this pattern, one of which is in my possession. †

They also had large gold anklets or bangles ‡,

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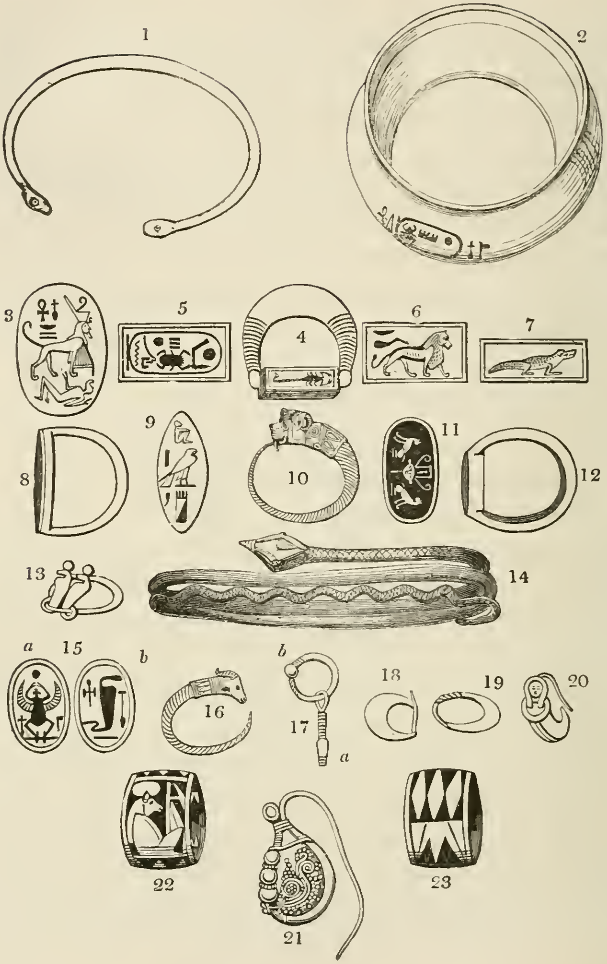
* Pliny is wrong in saying, "Non signat oriens, aut Ægyptus etiam nunc, literis contenta solis." xxxiii. i.

† Wood-cut, No. 412. *figs.* 11, 12.

‡ *Vide* Plin. xxxiii. 3.



No. 408. Rings, signets, bracelets, and earrings.

Fig. 1. Bronze bracelet, or bangle, in the museum of Alnwick Castle. 2. Gold bracelet in the Leyden Museum, bearing the name of Thothmes III., 1½ inch high, and 3 inches in diameter. 3. Scarabæus of amethyst, with a sphinx, emblematic of the king, trampling on a prostrate enemy; over it is the expression "Good God, Lord of the world." 4. A gold signet, mentioned in the last page. 5, 6, 7. The three other sides of the plinth. 8. A gold ring. 9. The engraved face of it. 10. A gold earring, about 1½ inch in diameter. 12. A gold ring in my possession four-fifths of an inch in diameter.. 11. The face of it, of the real size. 13. Gold ring with two asps. 14. A snake bracelet of gold. 15. A stone scarabæus. 16. Gold earring. 17. Gold earring with two pearls, *a* and *b*. 18, 19, 20. Other gold earrings. 21. Gold earring, 1 inch high, and six-tenths broad. 22, 23. Ring of porcelain, or blue-glazed pottery, Museum of Alnwick Castle.

armlets, and bracelets, frequently inlaid with precious stones, or enamel: some were in the shape of snakes, and others as simple rings: and worn by men as well as women. Kings are often represented with armlets and bracelets; and in the Leyden Museum is a gold one * bearing the name of the third Thothmes, which was doubtless once worn by that monarch; and, without any great licence of imagination we may suppose it to have been seen by Moses himself, if Thothmes was the Pharaoh who oppressed the Israelites, and into whose presence the Jewish legislator was so often summoned.

Handsome and richly ornamented necklaces were a principal part of the dress, both of men† and women; and some idea may be formed of the number of jewels they wore, from those borrowed by the Israelites at the time of the Exodus, and by the paintings of Thebes. They consisted of gold, or of beeds of various qualities, and shapes, disposed according to fancy: generally with a large drop, or figure in the centre. Scarabæi, gold, and cornelian bottles, or the emblems of goodness and stability, lotus flowers in enamel, amethysts, pearls, false stones, imitations of fish, shells, and leaves, with numerous figures, and devices, were strung in all the variety which their taste could suggest; and the sole museum of Leyden possesses an infinite assortment of those objects,

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* *Vide* wood-cut, No. 408. *fig.* 2.

† Necklaces and bracelets were worn by the Carthaginians, and by many Europeans, as the Gauls, Sabines and others. Judah's bracelets and signet are mentioned in Genesis, xxxviii. 18.

which were once the pride of the ladies of Thebes.

Some wore simple gold chains, in imitation of string, to which a stone scarabæus, set in the same precious metal, was appended; but these probably belonged to men, like the *torques* of the Romans.* A set of small cups, or covered saucers, of bronze gilt, hanging from a chain of the same materials, were sometimes worn by women; a necklace of which has been found, belonging to a Theban lady, — offering a striking contrast in their simplicity to the gold leaves inlaid with lapis lazzuli †, red and green stones of another she wore: which served, with many more in her possession, to excite the admiration of her friends.

The devices engraved on scarabæi, rings, and other objects of ornamental *luxe*, varied according to the caprice of individuals. Rings frequently bore the name of the wearer; others of the monarch in whose reign he lived; others, again, the emblems of certain deities; and many were mere fanciful combinations. The greater number consisted of scarabæi, mounted upon a gold ring passing through them: the scarabæus itself was of green stone, cornelian, hæmatite, granite, serpentine, agate, lapis lazzuli, root of emerald, amethyst, and other materials; and a cheaper kind was made of limestone, stained to imitate a harder and dearer quality; or of the ordinary blue pottery.

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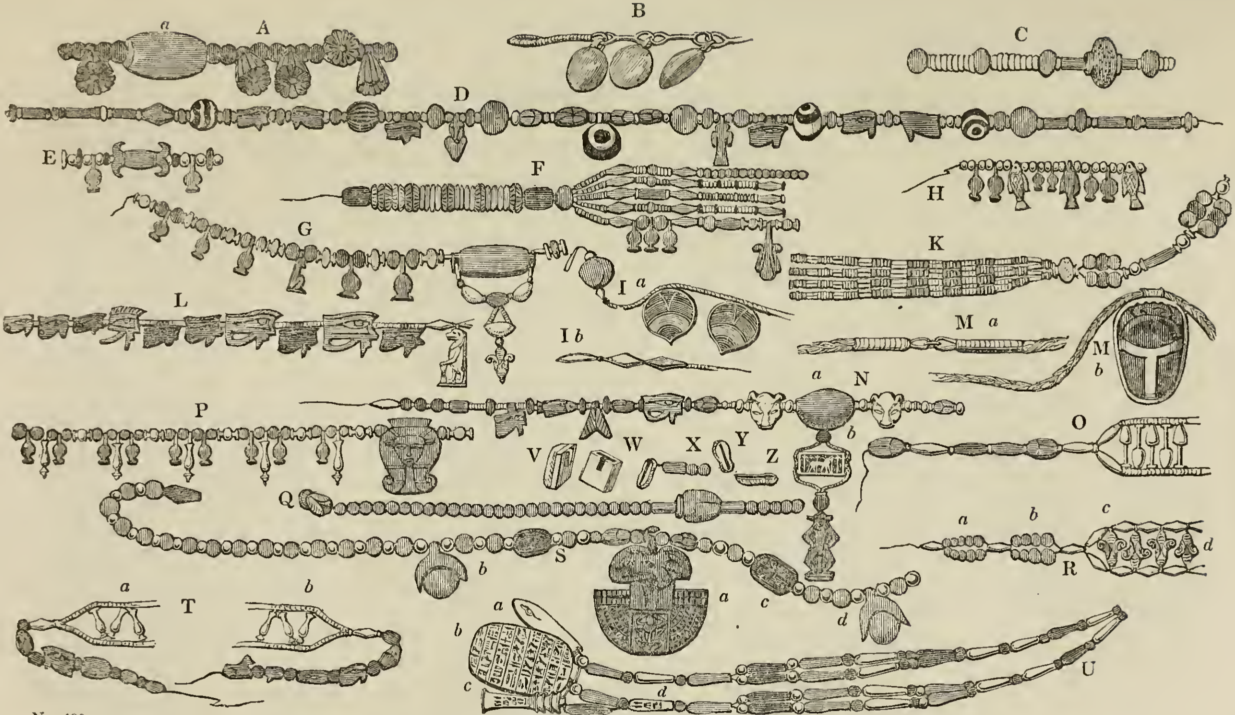
* Pharaoh "put a gold chain about (Joseph's) neck," Gen. xli. 42.: and "a ring upon Joseph's hand." *Vide* wood-cut, No. 409. *fig.* M.

† *Vide* wood-cut, No. 409. *figs.* B, I *a*.



No. 409.

Various Necklaces. from the Leyden Museum.

B is composed of small covered cups, of bronze gilt.
I *b* is the other end of I *a*. These leaves are of gold inlaid with lapis lazzuli and green and red stones.
M *a* a sort of gold *torques* or chain of which a stone scarabæus found in gold forms the centre ornament.
U in the possession Mr. Madox.
V W X Y Z gold catches of necklaces; one sliding into the other.

THE TOILET. OINTMENTS.

Of the various objects of the toilet, found at Thebes, and other places, the principal are bottles, or vases, for holding ointment, and *kohl*[*] or collyrium for the eyes, mirrors, combs, and the small boxes, spoons, and saucers, already mentioned.[†] The ointment was scented in various ways, and I have had occasion to notice[‡] some preserved in the museum at Alnwick Castle, which has retained its odour[§] several centuries; and the great[||] use of ointment by the Egyptians is sufficiently indicated in the paintings representing the reception of guests at their parties.

With the exception of the little found in the tombs, we have nothing to guide us respecting the nature of Egyptian ointments. Some appear to be made with a nut oil[¶], but it is probable that animal, as well as vegetable, grease was employed for this purpose; the other ingredients depending on the taste of the maker, or the purchaser. Julius Pollux[**] mentions a black kind made in Egypt, and speaks of the *sagdas* as an ointment of that country. Theophrastus[††], on the contrary, states that Egyptian ointments were colourless; but we can readily account for this variance of opinion, by supposing that they had in view two different qualities [*]: which is further proved, by the fact of our finding them both preserved at Thebes.

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[*] It has the same name in Hebrew.

[†] Vol. II. p.355. et seq.

[‡] Vol. II. p.214.

[§] Theophrastus says, "The Egyptian ointment was not very strongly scented."

[||] Athenæus says the revenues of Anthylla were given to the queens of Egypt for the purchase of ointments, another term for pin-money, lib. i. 25. *Vide* Corn. Nep. *in vitâ* Agesilai, and Juv. Sat. xv. 50.

[¶] This agrees with the *βαλανον* of Theophrastus. *Vide* Plin. xiii. 1.

[**] J. Pollux, Onom. vi. xix.

[††] Theophr. De odoribus.

Ointment was frequently kept in alabaster[†] bottles, or vases, (whence these obtained, among the Greeks, the name of *alabastron*, even if made of other materials); sometimes in those of the onyx[‡], or other stone, glass, ivory, bone, or shells[§]; specimens of all of which have been discovered in the tombs.

Strabo[||] says that the common people used the oil of the *kikki*, or castor-berry for anointing themselves, both men and women; the general purpose to which it was applied being for lamps: and many oils, as from the *simsim*[¶], olive, almond, flax, *selgam* (coleseed), *seemga*, lettuce, and other vegetable productions, were extracted in Egypt.[**]

The custom of anointing the body is usual in hot climates, and contributes greatly to comfort. Even the Greeks, Romans[††], and others, whose limbs were mostly covered with clothes, and protected from the dryness of the air, found the advantage of its use; and those whose skin was much exposed, in consequence of their scanty clothing, as the Ethiopians, and other inhabitants of Africa, felt the necessity of softening and cooling the skin by the application of oils or ointments; and we find the custom most prevalent among the blacks who wear the least covering to their body.

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[*] Plin. (xiii. 3.) says "Terrarum omnium Ægyptus accommodatissima unguentis." They adulterated their ointments. Plin. xiii. 1.

[†] Conf. Matt. xxvi. 7. "An alabaster box of very precious ointment."

[‡] Conf. Hor. iv. Od. xi. 17. "Nardi parvus onyx."

[§] Hor. ii. Od. v. 23. "Unguenta de conchis."

[||] Strabo, lib. xvii. p. 567. Herod. ii. 94. Plin. xv. 7.

[¶] Sesamum orientale.

[**] Plin. xiii. 1.

[††] Ennius tells us that, even in the time of Tarquin they had this custom:—

> "Tarquinii corpus bona fœmina lavit, et unxit."

Pliny doubts when it was introduced at Rome. xiii. 3.

Their principal care is bestowed upon the hair of the head, which they are not in the habit of shaving, except some of the upper classes among the inhabitants of the large towns; and the highest ambition of the Ethiopians is to obtain a sufficient quantity of grease, whatever kind it may be, to cover their head, and, to run down upon the shoulders, so as to give them a shining gloss, which they delight in displaying as they walk in the sun.*

The Egyptian combs were usually of wood, and double; one side having large, the other small teeth; the centre part was frequently ornamented with carved work, and, perhaps, inlaid. They were about four inches long, and six deep; and those with a single row of teeth were sometimes surmounted with the figure of an ibex, or other animal.

The custom of staining the eyelids and brows, with a moistened powder of a black colour, was common in Egypt from the earliest times; it was also introduced among the Jews and Romans, and

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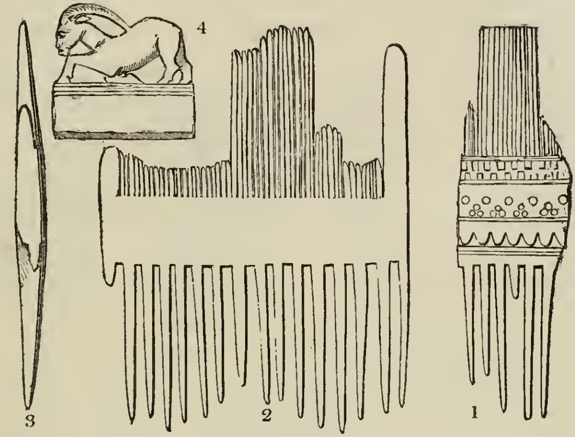
* Conf. Virg. Æn. v. 135. . . . . "juventus,
Nudatosque humeros oleo perfusa nitescit."



No. 410. Combs found at Thebes.
1. Comb, with the centre part ornamented.
3. Side view of fig. 2.
4. An Ibex, supposed to have formed the top of a comb.

is retained in the East to the present day. It is thought to increase the beauty of the eye; which is made to appear larger by this external addition of a black ring; and many even suppose the stimulus its application gives to be beneficial to the sight. It is made in various ways. Some use antimony, black oxide of manganese, preparations of lead, and other mineral substances: others the powder, or the lamp black of burnt almonds, or frankincense; and many prefer a mixture of different ingredients.

Mr. Lane* is perfectly correct in stating that the expression "painted her face," which Jezebel is said to have done, when Jehu came to Jezreel, is in the Hebrew, "painted her eyes*;" the same is again mentioned in Jeremiah and Ezekiel†; and the lengthened form of the ancient Egyptian eye, represented in the paintings, was probably produced, as Mr. Lane supposes, by this means.

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* Modern Egyptians, vol. i. p. 43.

Such is the effect described by Juvenal‡, Pliny § and other writers, who notice the custom among the Romans. At Rome it was considered disgraceful for men to adopt it, as at present in the East, except medicinally; but, if we may judge from the similarity of the eyes of men and women in the paintings at Thebes, it appears to have been used by both sexes among the ancient Egyptians.

Many of these *Kohl* bottles have been found in the tombs, together with the bodkin used for applying the moistened powder. They are of various materials, usually stone, wood, or pottery, sometimes composed of two, sometimes of four and five separate cells, apparently containing each a mixture, differing slightly in its quality and hue, from the other three. Many were simple round tubes, vases, or small boxes: some were ornamented with the figure of an ape, or monster, supposed to

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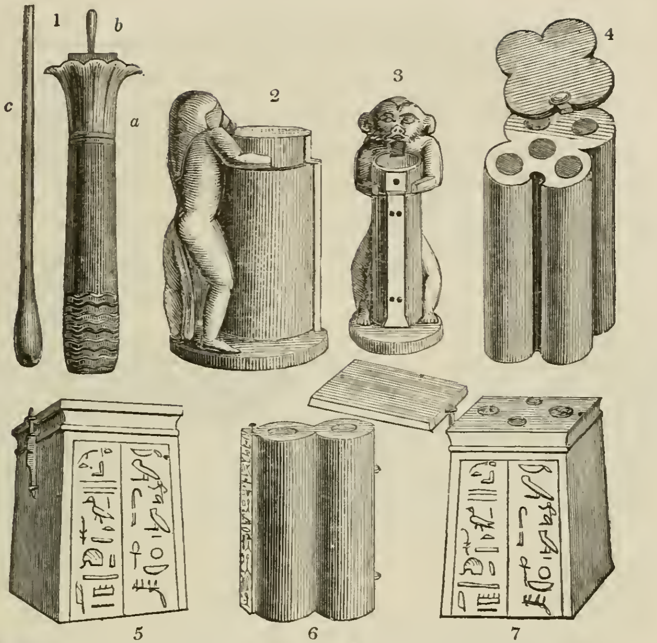
* 2 Kings, ix. 30. עיניה. In our translation, "She painted her face, and tired her head, and looked out at a window." In the margin "put her eyes in painting."

† Ezek. xxiii. 40. "For whom thou didst wash thyself, paintedst thine eyes, and deckedst thyself with ornaments." In Jeremiah (iv. 30.), it is in Hebrew "eyes."

‡ Juv. Sat. ii. 93.: —

> "Ille supercilium madidâ fuligine tactum
> Obliquâ producit acu, pingitque trementes
> Attollens oculos."

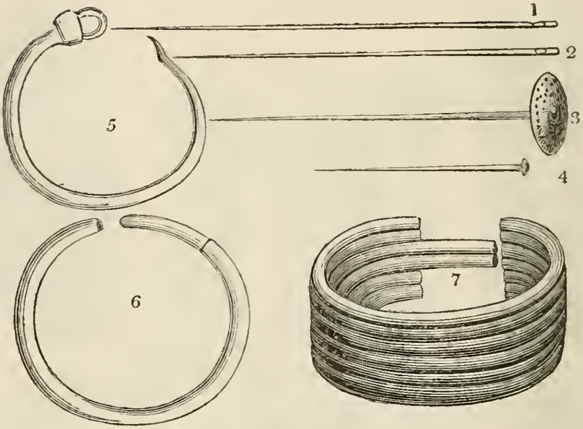
§ Plin. Ep. vi. 2.



No. 411. Boxes, or bottles, for holding the *Kohl*, for staining the eyelids.
1. In Mr. Burton's collection. *c* is the bodkin for applying the *Kohl*. The others are in the museum of Alnwick Castle.

assist in holding the bottle between his arms, while the lady dipped into it the pin, with which she painted her eyes; and others were in imitation of a column made of stone, or rich porcelain of the choicest manufacture.

Pins and needles were also among the articles of the toilet, which have been occasionally found in the tombs. The former are frequently of considerable length, with large gold heads; and some, of a different form, tapering gradually to a point, merely bound with gold at the upper end, without any projecting head, seven or eight inches in length, appear to have been intended for arranging the plaits or curls of hair; like those used in Eng-



No. 412. Needles, Pins, and Earrings.

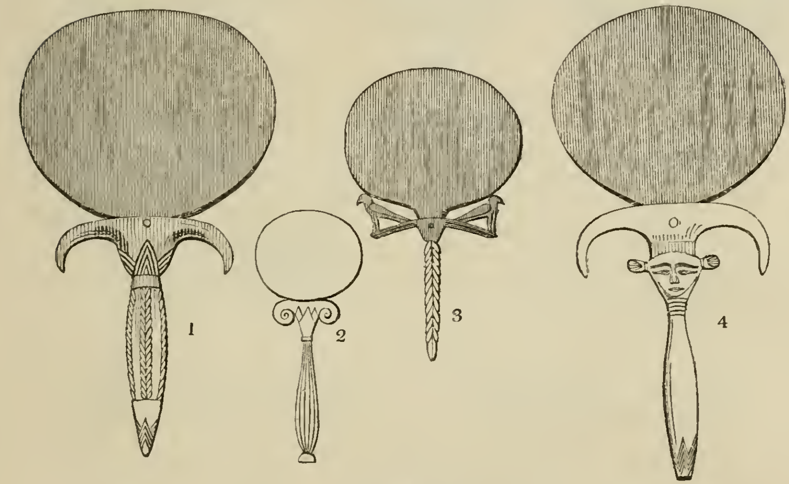
1, 2, Bronze needles in the Museum of Alnwick Castle, 3 and 3½ inches long. 3, Large gold-headed pin, in the Berlin collection. 4, Another of smaller size. 5, Silver earring in my possession, one and four tenths of an inch in diameter. 6, Gold earring in the Berlin Museum, one and one third of an inch in diameter. 7, Another, seen from above.

land, in the days of Elizabeth, for nearly the same purpose.

Some needles were of bronze, from three to three and a half inches in length; but as few have been found, we are not able to form any opinion respecting their general size and quality, particularly of those used for fine work, which must have been of a very minute kind.

One of the principal objects of the toilet was the mirror. It was of mixed metal, chiefly copper, most carefully wrought and highly polished; and so admirably did the skill of the Egyptians succeed in the composition of metals, that this substitute for our modern looking-glass was susceptible of a lustre, which has even been partially revived at the present day, in some of those discovered at Thebes, though buried in the earth for many centuries.

The mirror itself was nearly round, inserted into a handle of wood, stone, or metal, whose form varied according to the taste of the owner. Some presented the figure of a female, a flower, a column, or a rod ornamented with the head of Athor, a bird, or a fancy device; and sometimes the face of a typhonian monster was introduced to support the mirror, serving as a contrast to the features whose beauty was displayed within it. The same kind of metal mirror was used by the Israelites, who doubtless brought them from Egypt; and the brazen laver made by Moses for the tabernacle, was composed "of the looking-glasses of the women, which assembled at the door of the tabernacle of the congregation."*



No. 413. Metal Mirrors.
1, 3, 4, Mr. Salt's collection. 2, From a painting at Thebes. 4, is about 11 inches high.

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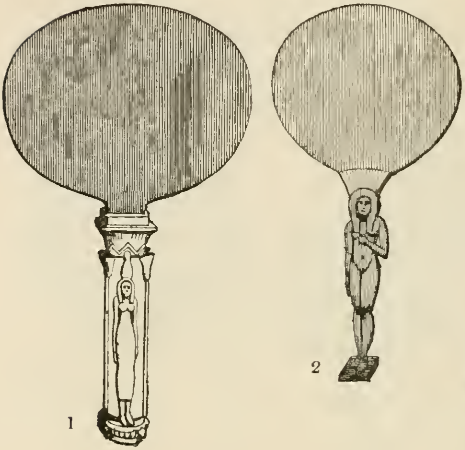
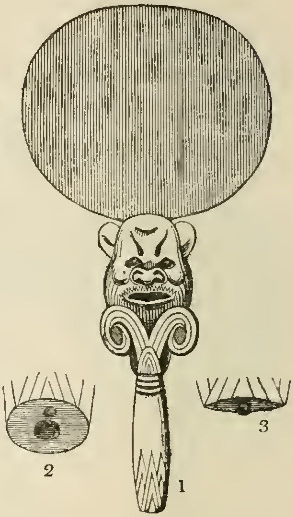
* Exod. xxviii. 8. "He made the laver of brass, and the foot of it of brass, of the looking-glasses." The word brass, "nahas," is used in

When walking from home, Egyptian gentlemen frequently carried sticks, varying from three or four, to about six feet in length, some of which were surmounted with a knob, imitating a flower*; and others with the more usual peg

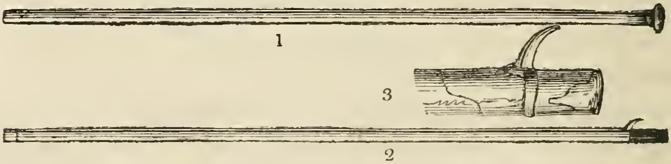




Other Metal Mirrors.

No. 414.—Fig. 1, In Mr. Salt's collection; with a wooden handle. Fig. 2, in the Museum of Alnwick Castle.

No. 415.—In the possession of Dr. Hogg. 2, and 3, show the bottom of the handle, to which something has been fastened.

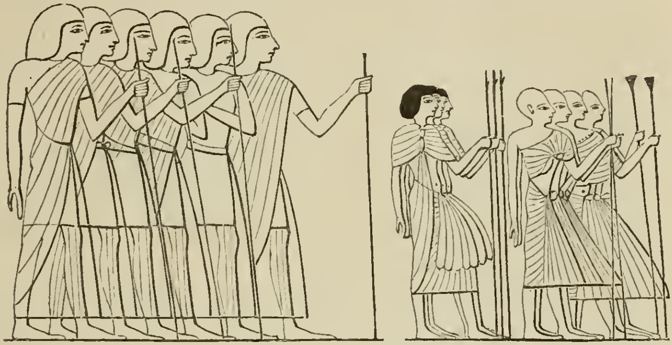


No 416. Walking sticks found at Thebes. 2, is of cherry-wood in Mr. Salt's collection. 3, shows the peg at the side.

Hebrew, as in Arabic, to denote copper in any form, or with any alloy. The "looking-glass," or mirror, is in Hebrew and Arabic, miráth, or miráh. The roots of these two words, and probably of the Coptic, are related.

* Wood-cut, No. 417. *fig.* 4. and No. 416 *a. fig.* 1.

projecting from one side*, some of which have been found at Thebes. One in the possession of Mr. Salt, of the latter form, was of *cherry*† wood, and only three feet three inches long; and those I have seen with the lotus head were generally about the same length. Others appear to have been much longer; the sculptures represent them at least six feet; and one brought to England by Mr. Madox was about five feet in length.



No. 417. Priests and other persons of rank walking with sticks. *Thebes.*

On entering a house they left their stick in the hall, or at the door; and poor men were sometimes employed to hold the sticks of the guests who had come to a party on foot, being rewarded by the master of the house, for their trouble, with a trifling compensation in money, with their dinner, or a piece of meat‡ to carry to their family. The name of each person was frequently written on his stick*, in hieroglyphics (instances of which I have seen in those found at Thebes); for which reason a hard wood was preferred, as the acacia, which seems to have been more generally used than any other.

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* Wood-cut, No. 417. *fig.* 2. and 416 *a. fig.* 2.

† According to Pliny, (xv. 25.) this tree was introduced into Italy by Lucullus, from Pontus, and thence went to Britain. He says it would not grow in Egypt, and it is not now found there; but is not a species *indigenous* in the north of our island?

‡ *Vide* Plate 12. *fig.* 10. Vol. II.

BATHS. DOCTORS.

We have little knowledge of the nature of their baths, but as they were forbidden in deep mourning to indulge in them†, we may conclude they were considered as a luxury, as well as a necessary comfort.

The only instance I have met with in the paintings is in a tomb at Thebes, where a lady is represented with four attendants, who wait upon her, and perform various duties.

One removes the jewellery and clothes she has taken off, or suspends them to a stand in the apartment; another pours water from a vase over her head, as the third rubs her arms and body with her open hands; and a fourth seated near her, holds a sweet scented flower to her nose, and supports her as she sits. The same subject is treated nearly in the same manner on some of the Greek vases, the water being poured over the bather who kneels, or is seated on the ground.

Warm‡ as well as cold baths were used by the Egyptians, though for ordinary ablutions cold water§ was preferred; and both were probably recommended and taken medicinally, when occasion required.

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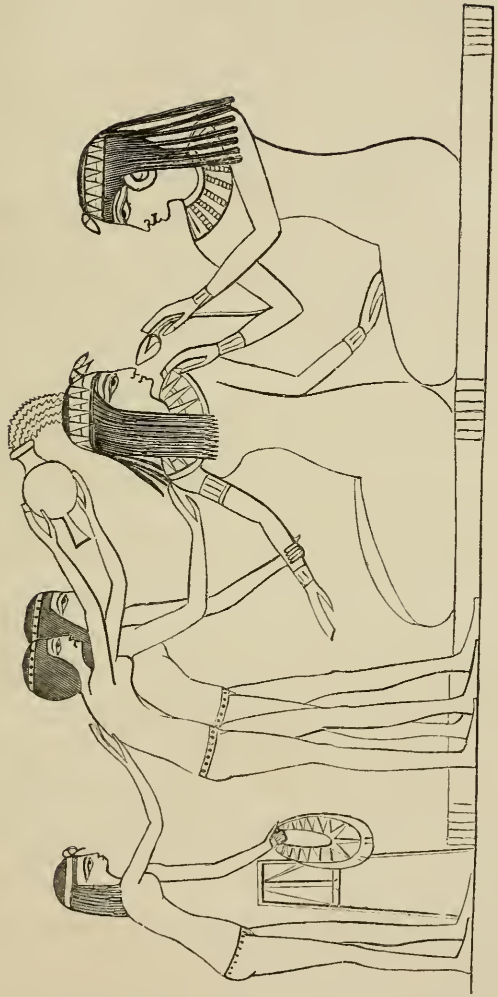
* Conf. Num. xvii. 2. "Write thou every man's name upon his rod."

† Diod. i. 72.

‡ Diodorus (i. 84.) says they were even kept for the sacred animals

§ Herodot. ii. 37.



No. 417. *a* A lady in the bath with her attendants. *Thebes.*

1. The lady seated on a mat or carpet. 2. An attendant holding a flower, and supporting her. 3. Rubs her arm with the hand, as in the modern Turkish bath. 4. Pours water over her. 5. Takes care of her clothes and ornaments.

The Egyptians paid great attention to health, and "so wisely," says Herodotus*, "was medicine managed by them, that no doctor was permitted to practise any but his own peculiar branch. Some were oculists, who only studied diseases of the eye; others attended solely to complaints of the head; others to those of the teeth; some again confined themselves to complaints of the intestines; and others to secret and internal maladies: accoucheurs being usually, if not always, women.*

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* Herodot. ii. 84.

They received certain salaries from the public treasury; and after they had studied those precepts which had been laid down from the experience of their predecessors, they were permitted to practise; and, in order to ensure their attention to the prescribed rules, and to prevent dangerous experiments being made upon patients, they were punished if their treatment was contrary to the established system: and the death of a person entrusted to their care, under such circumstances, was adjudged to them as a capital offence.† If, however, every remedy had been administered according to the sanatory law, they were absolved from blame‡; and "these provisions," says Diodorus, "were made with the persuasion that few persons could be capable of introducing any new treatment superior to what had been sanctioned and approved by the skill of old practitioners."

Though paid by government as a body, it was not illegal to receive fees for their advice and attendance; and demands could be made in every instance, except on a foreign journey, and on military service, when patients were visited free of expense.*

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* As at present in Egypt. *Vide* Exod. i. 15.

† Pliny observes, there is no law to punish their ignorance at Rome, and that a physician is the only man who can kill another with impunity. "Nulla præterea lex, quæ puniat inscitiam capitalem, nullum exemplum vindictæ. Discunt periculis nostris, et experimenta per mortes agunt: medicoque tantum hominem occidisse impunitas summa est." Plin. xxix. 1.

‡ Diod. i. 82.

The principal mode adopted by the Egyptians for preventing illness was attention to regimen and diet; "being persuaded that the majority of diseases proceed from indigestion and excess of eating;" and they had frequent recourse to abstinence, emetics, slight doses of medicine, and other simple means of relieving the system†, which some persons were in the habit of repeating every two or three days. "Those who live in the corn country," as Herodotus terms it‡, were particular for their attention to health. "During three successive days, every month, they submitted to a regular course of medicine;" from the conviction that illness was wont to proceed from some irregularity in diet; and if preventives were ineffectual, they had recourse to suitable remedies, adopting a mode of treatment very similar to that mentioned by Diodorus.

The employment of numerous drugs in Egypt has been mentioned by sacred and profane writers; and the medicinal properties of many herbs which grow in the deserts, particularly between the Nile and Red Sea, are still known to the Arabs; though their application has been but imperfectly recorded and preserved. "O virgin, daughter of Egypt," says Jeremiah[*], "in vain shalt thou use many medicines, for thou shalt not be cured." Homer, in the Odyssey[†], describes the many valuable medicines given by Polydamna, the wife of Thonis, to Helen while in Egypt, "a country whose fertile soil produces an infinity of drugs, some salutary and some pernicious; where each physician, possesses knowledge above all other men;" and Pliny makes frequent mention of the productions of that country, and their use in medicine.

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* Diod. loc. cit.

† "*Θεραπευουσι τα σωματα κλυσμοις, και νηστειαις, και εμετοις.*" — Diod. loc. cit.

‡ Herodot. ii. 77.

He also notices the physicians of Egypt[‡]; and as if their number[§] was indicative of the many maladies to which the inhabitants were subject, he observes, that it was a country productive of numerous diseases. In this, however, he does not agree with Herodotus[‖], who affirms that, "after the Libyans, there are no people so healthy as the Egyptians, which may be attributed to the invariable nature of the seasons in their country." In Pliny's time, the introduction of luxurious habits and excess had probably wrought a change in the people; and to the same cause may be attributed the numerous complaints among the Romans, "unknown to their fathers and ancestors."[¶]

The same author tells us, that the Egyptians examined the bodies after death, to ascertain the nature of the diseases of which they had died[**]; and we can readily believe that a people, so far advanced in civilisation and the principles of medicine, as to assign each physician his peculiar branch, would have resorted to this effectual method of acquiring knowledge and experience, for the benefit of the community.

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[*] Jerem. lxvi. 11.

[†] Homer, Od. iv. 229.

[‡] Plin. xxvi. 1.

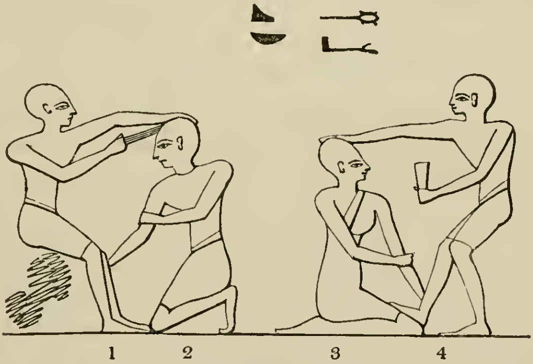
[§] Herodotus says, "Every place is full of doctors," in Egypt, ii. 84.

[‖] Herodot. i. 77.

[¶] Plin. loc. cit.

[**] Plin. xix. 5. "In Ægypto, regibus corpora mortuorum ad scrutandos morbos insecantibus."

It is evident that the medical skill of the Egyptians was well known even in foreign and distant countries; and we learn from Herodotus*, that Cyrus and Darius both sent to Egypt for medical men. But though their physicians are often mentioned by Herodotus and other writers, the only indication of medical attendance occurs in the paintings of Beni Hassan, where a doctor and a patient are twice represented.



No. 418. Doctors and patients. *Beni Hassan.*

Diodorus tells us†, that dreams were regarded in Egypt with religious reverence, and the prayers of the devout were often rewarded by the gods, with an indication of the remedies their sufferings required; but this and magic* were only a last resource, when the skill of the physician had been baffled, and all hopes of their recovery were lost: and a similar superstitious feeling induced them to offer ex votos in their temples for the same purpose.

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* Herodot. iii. 1. and 132.

† Diodorus' account of learning remedies from dreams, is not quite consistent with the positive observations they took so much care to make. The advocates for animal magnetism may perhaps see it in this passage of the historian. . . . i. 25.

They consisted of various kinds. Some persons promised a certain sum for the maintenance of the sacred animals, belonging to the deity whose interposition they solicited; which, in the case of children, was decided by weighing a certain portion of the hair of their head, "either all, or half, or a third†," shaved expressly for the purpose; and as soon as the cure had been effected, they accomplished their vow by giving an equal weight of silver to the curators.

These persons occasionally visited different parts of the country, carrying with them the banners of their respective deities; and the credulity of the peasants being frequently induced to solicit their aid, and to barter the doubtful assistance of the god for the real rewards lavished on his artful servants, much money was collected by them. And so profitable was it, that neither the change of religion, nor the simplicity of Islám, have been able to discard the custom: and the guardians of the shekh's tombs, in like manner, send their emissaries with flags and drums to different parts of the country, to levy contributions from the credulous, in return for the promised assistance of their *wellee*, or patron saint.

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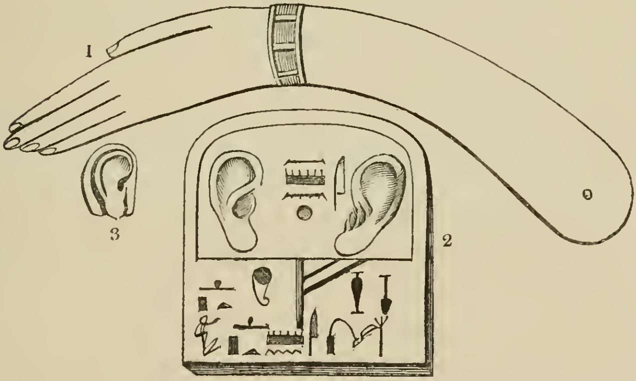
* Wisdom of Solomon, xvii. 8.
† Herodot. ii. 65.

After the cure was effected, they frequently suspended a model of the restored part, in the temple of the god, whose interposition they had invoked; precisely in the same manner as in the shekh's tombs of modern Egypt, and in the Roman catholic chapels of Italy and other countries, consecrated to the Virgin, or a saint; and ears, eyes, distorted arms, and other members, were dedicated as memorials of their gratitude and superstition.



No. 419. Exvotos.

1, Ivory hand, in Mr. Salt's collection. 2, Stone tablet, dedicated to Amunre, for the recovery of a complaint in the ear: found at Thebes. 3, An ear of terra cotta in my possession, from Thebes.

Sometimes travellers, who happened to pass by a temple, inscribed a votive sentence on the walls, to indicate their respect for the deity, and solicit his protection during their journey; the complete formula of which contained the adoration (*proskunéma*) of the writer, with the assurance that he had been mindful of his wife, his family, and friends; and the reader of the inscription was sometimes included in a share of the blessings it solicited. The date of the king's reign, and the day of the month were also added, with the profession and parentage of the writer. The complete formula of the *proskunéma* was as follows: "The adoration of Caius Capitolinus, son of Flavius Julius, of the fifth troop of Theban horse, to the goddess Isis, with ten thousand names. And I have been mindful of (or have made an adoration for) all those who love me, and my consort, and children, and all my household, and for him who reads this. In the year 12 of the emperor Tiberius Cæsar, the 15th of Paüni.

The Egyptians, according to Pliny[*], claimed the honour of having invented the art of curing diseases. Indeed, the study of medicine and surgery appears to have commenced at a very early period in Egypt, since Athothes, the second king of the country, is stated to have written upon the subject of anatomy[†]; and the schools of Alexandria continued till a late period to enjoy the reputation, and display the skill, they had inherited from their predecessors. Hermes[‡] was said to have written six books on medicine, the first of which related to anatomy[§]; and the various recipes, known to have been beneficial, were recorded, with their peculiar cases, in the memoirs of physic, inscribed among the laws already alluded to; which were deposited in the principal temple of the place, as at Memphis in that of Pthah, or Vulcan.

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[*] Plin. vii. 56.

[†] *Vide* Vol. I. p. 25.

[‡] Hermes and Athothes may have been confounded, or they may be in this instance the same person. The god Hermes, or Thoth, generally implied intellect.

[§] Clem. Alex. Strom. vi.

The embalmers were probably members of the medical profession, since the knowledge, required for that purpose, appears to be connected with their peculiar studies; and the Bible expressly states, that "the physicians* embalmed" Jacob. This part, however, belongs more properly to the funeral ceremonies of the Egyptians, into which I do not here intend to enter; reserving that portion of my subject to a future opportunity, and to a work, whose less contracted dimensions will enable me to introduce the paintings connected with it, on a more suitable scale than these pages will permit; I shall also take advantage of the same opportunity of entering more fully into the mythology of the Egyptians, and the ceremonies connected with their religion.

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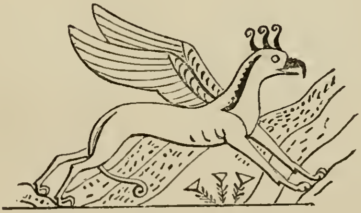
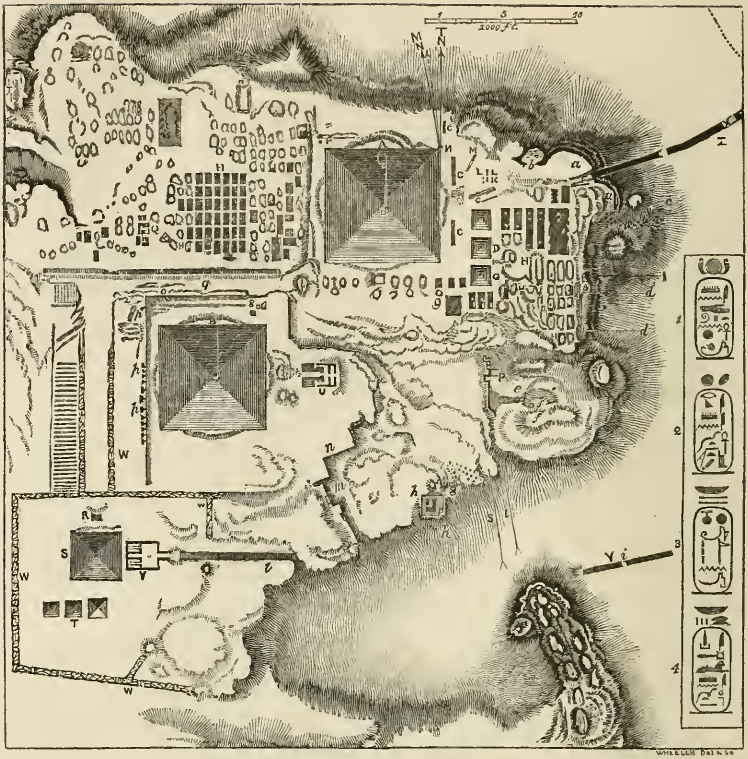
* Gen. l. 2.





Topographical Plan of the Pyramids of Geezeh.

A, Entrance to the great pyramid.
B, Entrance to the second pyramid.
C C, Long pits, by some supposed for mixing the mortar.
D, Pyramid of the daughter of Cheops (Herodotus, ii. 126.).
E, Pavement of black stones (basaltic trap), the same as found on the causeways of the pyramids of Saqqâra.
F, Remains of masonry.
G, Round inclosures of crude brick, of Arab date, at N. E. angle of this pyramid.
H, Tombs of individuals, with deep pits.
I, The tomb of numbers.
K, Two inclined passages, meeting under ground, apparently once belonging to a small pyramid that stood over them.
L L, The rock is here cut to a level surface.
M, A narrow and shallow trench cut in the rock.
N, A square space cut in the rock, probably to receive and support the corner stone of the casing of the pyramid.
P, Here stood a tomb which has received the title of the Temple of Osiris.
Q, Tomb of trades, to west of tombs H.
R, A pit cased with stone, of modern date.
S, The third pyramid.
T, Three small pyramids.
U, V, Ruined buildings, whose original use it is now difficult to determine.
W W W, Fragments of stone, arranged in the manner of a wall.
X, A few palms and sycamores, with a well.
Y, Southern stone causeway.
Z, Northern causeway, repaired by the Caliphs.
a, Tombs cut in the rock.
b, Masonry.
c, Black stones.
d d, Tombs cut in the rock.
e, The sphinx.
f, Pits, probably unopened.
g, Pits.
h, Stone ruin on a rock.
i, Doorway, or passage, through the causeway.
k, A grotto in the rock.
l, Inclined causeway, part of Y.
m, *n*, Tombs in the rock.
o, Some hieroglyphics on the rock.
p, Tombs cut in the scarp of the rock.
q, Stone wall.
r, Steps cut in the rock, near the N. W. angle of the great pyramid.
s, *t*, Magnetic south, in 1832 and 1836, corresponding to M N; T N being "true north."
The names 1. and 2. are of king Ergamenes, mentioned by Diodorus, lib. iii. s. 6., and another Ethiopian monarch, found at Dakkeh.

APPENDIX A.

PRINCIPAL OBJECTS TO BE VISITED IN A TOUR UP THE NILE.

In order to render this book more useful to travellers in Egypt, I shall introduce the notes I had drawn up for some friends, who required a brief statement of the principal objects worthy of a visit, on the Nile, without having to seek their order and position in the numerous pages of voluminous books of travels; referring the reader, who wishes for a more detailed account of them, to my Egypt and Thebes.

At Alexandria are Pompey's pillar, with its inscription, of the time of Diocletian; the obelisks; some traces of the ancient streets; and, along the coast to the west, the catacombs, of Greek time; and, to the east, beyond the French lines, the ancient Roman station, where the English and French armies engaged.

Between Alexandria and Cairo, a journey of three days, the site of Saïs, now Sa-el-Hagar; its large walls, the lake mentioned by Herodotus, and brick houses.

Near Cairo, Heliopolis, now Mataréeh, its obelisk of Osirtasen I., remains of the walls and houses; the station of Egyptian Babylon, and the mosk of Amer, at old Cairo; the pyramids of Geezeh (*Vide* the plan), of Saqqára, and Dashoor. At Saqqára is a stone arch of the time of Psamaticus II., the oldest known. It is in a tomb, cut in the face of the rock, about east south east of the principal pyramid. At Mit-raheny, a large colossus of Remeses II.; mounds of Memphis; some fragments of statues, and remains of building.

On east bank, eight miles to the south of Cairo, quarries of Maasara, from which the stone used for part of the casing of the pyramids was taken. Some hieroglyphic tablets, in one of which oxen are represented drawing a stone placed on a sledge. (*Vide* wood-cut, No. 389.) A little beyond the modern village is an inclined road, which leads from the quarries to the river. Thirty miles further to the south, on the same bank, is Atfééh; mounds of Aphroditopolis; no ruins. False pyramid on opposite bank. Three miles beyond, El Feshn, and on east bank, remains of crude brick; the walls of an ancient village, called El Héebee, and some hieroglyphics.

From Benisooef is the road to the Fyoom, which, when the Nile is low, may be visited conveniently. A brick pyramid at Illahoon, another at El Hawára, and vestiges of the labyrinth. Obelisk at Biggig. Ruins on and near the lake Mœris, and at Qasr Kharóon.

From Aboogirgeh is the shortest road to Bahnasa (Oxyrinchus); mounds; no ruins. Gebel e'Tayr, north end, grotto or rock temple, called Babâyn; convent further to the south. Eight miles below Minyeh, is Tehneh (Acóris), on east bank. A Greek Ptolemaic inscription on the face of the cliff; tombs hewn in the rock, with small inscriptions at the doors: Roman figures in high relief, on the upper part of the rock; some hieroglyphic tablets; quarries on the top of the mountain; a tank, &c.

Same (east bank), seven miles above Minyeh, Kom áhmar, some grottoes, and ruins of an old town. Nine miles further, east bank, Beni Hassan; very fine grottoes, with curious paintings; and about a mile and a half further, a grotto, or rock temple, of Pasht (Bubastis, or Diana); the Speos Artemidos. Cat mummies in the ravine.

Antinoë, now Shekh Abádeh, few remains of the town; a theatre, the principal streets, baths, &c.; outside the town, on the east, is the hippodrome. The grottoes in the mountain are unsculptured, and have some Christian inscriptions. A little to the north of Antinoë are the remains, apparently, of Besa, scarcely worthy of a visit.

At El Bersheh, a grotto on the mountain, in which a colossus is represented on a sledge, (*Vide* wood-cut, No. 390.) At Oshmoonayn, west bank, no longer any remains of Hermopolis Magna. At Gebel Toona, a mountain skirting the desert to the west, are mummy pits, a tablet of hieroglyphics, and statues in high relief. At Mellawee, and at Tanoof, (Tanis superior,) mounds, but no ruins. At Sbayda, at corner of mountains on east bank, crude brick walls, and some grottoes.

At Shekh Saïd, the mountains recede to the eastward, leaving the river; and a little beyond is the village of Tel el Amarna, to the north of which are the remains of a small town, and to the south, the ruins of a city, which I suppose to be Alabastron. All the stone buildings have been quite destroyed, but some of the brick houses remain. Near the crude brick towers of the temple are the largest houses. (*Vide* plan, Plate VI. Vol. II. p. 106.) To the east are several fine grottoes in the face of the mountain, with curious sculptures; and on the summit of it is an ancient alabaster quarry.

Six miles below Manfaloot, at el Harýib, ruins of an old town, in a ravine of the Gebel Aboolfaydee; numerous dog and cat mummies. Near el Maabdeh, opposite Manfaloot, crocodile mummies in chambers of great extent in the mountain.

At E'Sioot (Lycopolis), the capital of Upper Egypt, grottoes; wolf mummies: the modern cemetery is prettily laid out. Gow (Antæopolis), a few stones of the temple, close to the river; some grottoes at the corner of the mountain, to the north, below Gow, but not containing good sculpture. Shekh Herédee, small grottoes; Roman statue at the base of the mountain, cut out of a piece of rock. The snake of Shekh Hereedee is still supposed to perform cures.

To the west of Soohàg, near the corner of mountains, old town of Athribis; a Greek inscription in the ruined temple; grottoes in the mountain, and to the north is the white monastery, or Dayr Amba Shnóodee. Nearly opposite Soohag is E'Khmim (Panopolis); Greek inscription of the temple of Pan; and some remains of other stone buildings.

Mensheëh (Ptolemaïs Hermii), west bank. Eight miles above E'Khmim, remains of a stone quay. From Girgeh go to Abydus (now Arábat el matfóon), three hours' ride, and send on the boat to Bellianeh, returning to the boat in the evening at Bellianeh, two hour's ride; or, coming down the river, stop at Bellianeh, and send on the boat to Girgeh. At Abydus, two temples, and many tombs.

How (Diospolis parva), has very few remains, of Ptolemaic or Roman time. In mounds at the edge of the desert, a mile and a half south of How, some tombs; one, of a certain Dionysius, son of one Ptolemy, has some sculpture.

Qasr e'Syád (Chenoboscion), remains of a quay; about one mile beyond the eastern mouth of the canal of this village are some very ancient grottoes, with kings' names. (*Vide* wood-cut, No. 381.) Dendera (Tentyris), opposite Qeneh; two temples, inscriptions, zodiac, &c. Qeneh is famous for its manufacture of porous jars. From it roads lead to Kossayr on the Red Sea.

Qoft (Coptos); ruins of the old town, and of a temple; a Christian church; canals, &c.; at the village of el Qala, to the north, is a small Roman Egyptian temple.

Qoos (Apollinopolis parva); no more ruins left; at a well on the north of the town, is a Ptolemaic monolith, with hieroglyphics, converted into a tank; and a few stone remains of early time, in the plain to the west, near a Shekh's tomb. Thebes (Diospolis magna), on the east bank, Karnak and Luqsor; on the west, the tombs of the kings, private tombs, several temples, colossi of the plain, &c.; for these I refer the reader to my Egypt and Thebes.

Erment (Hermonthis), west bank; temple and early Christian church. Tuot, or E'Seleméëh (Tuphium); on east bank Ptolemaic temple, much ruined, and concealed by the hovels of the peasants. Gebelayn, i. e. "the two hills," a small ancient town in ruins, and grottoes, not worthy of a visit. At Tofnées and Asfoón, mounds of ancient towns, no ruins.

Esneh (Latopolis), fine portico, zodiac, and quay. At E'dayr, three miles to the north of Esneh, remains of a small temple of the Ptolemies and Cæsars, lately destroyed. Thirteen miles from Esneh, near El Qenan, ruins of a quay, on west bank; and three miles further, a small stone pyramid; opposite the quay is the junction of the limestone and sandstone. Four miles beyond, on east bank, is El Kab (Eilethyas); ruins of a very ancient town; the temples lately destroyed: curious grottoes in the mountain; and a short distance up the valley, are three small temples. In the bed of the ravine are ponds encrusted with natron.

Edfoo (Apollinopolis magna), two temples. Eleven miles above Edfoo, and on east bank, remains of an old town, on face of hill, fortified with towers of Arab construction. Silsilis (now Hagar

Silsili), quarries of sandstone, used for building the temples of Upper Egypt; tablets, and grottoes. Kom ombo (Ombos); two temples; ancient stone gateway in a crude brick wall on the east side of the enclosure of the temples; houses burnt.

At E'Sooan (Syene) ruins of small temple of Roman date; some columns; Saracen wall, and Cufic tombstones; granite quarries; in one of which is a broken obelisk; Latin inscription of Caracalla, near another quarry; road to Philæ, and wall; numerous hieroglyphic tablets on the rocks. Island of Elephantine; opposite the projecting rocks of E'Sooan, is the Nilometer, which is a staircase, with Greek inscriptions, relating to the rise of the Nile. Granite gateway, bearing the name of Alexander, the son of Alexander the Great.

At the northern end of the cataract is the island of Seháyl. Few vestiges of a temple; hieroglyphic tablets on the rocks. Go from E'Sooan to Seháyl in a boat, and ride to Philæ. At Philæ temples and ruins. Island of Biggeh, opposite Philæ, to the west, ruined temple, tablets, &c.

NUBIA.

Dabóde (Parembole), temple, west bank. Kerdássy, ruins and quarries. Tafa (Taphis), two small ruins, and stone enclosures. Kalabshee (Talmis), large temple; quarries; and, on hill behind it, to the northward, a small but interesting temple, called Bayt el Wellee, cut in the rock, of the time of Remeses II. Dandoor, temple. Gerf Hossayn (Tutzis), temple cut in the rock, of the time of Remeses II.

Dakkeh (Pselcis); temple of Ptolemaic and Roman date. It has also the names of two Ethiopian princes *, Ergamun, or Ergamenes (mentioned by Diodorus, iii. 6., as a contemporary of Ptolemy Philadelphus), and Ataramun?; many Greek inscriptions. Opposite Dakkeh, ruins of Contra Pselcis, or of Metacompso.

Corte (Corti); few remains. Maharraka, or Oofideena, ruins of *Hierasycaminon;* style bad, and all of late date: Isis is represented under the *sacred fig tree.* Sabooa; temple of the time of Remeses II., with avenue of sphinxes; the adytum is cut in the rock, the rest built. Hassaia, or Amada, a temple of Thothmes, ancient; nearly opposite to it is Dayr or Dirr, on east bank, the capital of Nubia, which has a temple, cut in the rock, of the time of Remeses II.

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* *Vide* the wood-cut in page 398. *figs.* 1. 2. 3. and 4.

Ibreem (Primis parva); part of the ancient wall on south side of town; remains of a stone building amidst the houses; some small grottoes below the town, near the river. Aboosimbel, two temples, cut in the rock, the finest Egyptian monuments out of Thebes: they are of the time of Remeses II.

At Ferayg, nearly opposite, on east bank, a small temple in the rock. Farras, on west bank, few remains; grottoes, with Coptic inscriptions, some distance from the river. Wadee Halfeh; remains of three buildings, on west bank; fine view of the second cataract from a rock on the same bank, a short walk to the south of Wadee Halfeh.

A day and a half beyond Wadee Halfeh are the two small temples of Sámneh, and the third cataract.

The distances from the Mediterranean to the second cataract are as follow: —

From Rosetta to Cairo - -	about 110 miles.	148½
Cairo to Benisooef - - - -	83	77
Benisooef to Minyeh - - - -	85	82½
Minyeh to E'Sioot - - - -	106	94¼
E'Sioot to Girgeh - - - -	97	88
Girgeh to Qeneh - - - -	73	64
Qeneh to Thebes - - - - -	49	48½
Thebes to Esneh - - -	38	32
Esneh to E'Sooan - - - -	100	92
E'Sooan to Wadee Halfeh - - -	219	219½
Total from Rosetta to Wadee Halfeh	960 miles.	945

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